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Flora of Micronesia, 3: Convolvulaceae

F. RAYMOND FOSBERG
and
MARIE-HÉLÈNE SACHET



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Flora of Micronesia,
3: Convolvulaceae

F. Raymond Fosberg
and Marie-Hélène Sacht

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ABSTRACT

Fosberg, F. Raymond, and Marie-Hélène Sachet. Flora of Micronesia, 3: Convolvulaceae. *Smithsonian Contributions to Botany*, number 36, 34 pages, 1 figure, 1977.—The third installment of the Flora of Micronesia includes a brief introduction with acknowledgments and references to the previously published parts of the flora. A floristic taxonomic account of the Convolvulaceae of Micronesia is given, with descriptions, keys, synonymy, ethnobotany (including vernacular names and uses), and citations of geographic records and herbarium specimens.

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Flora of Micronesia, 3: Convolvulaceae

*F. Raymond Fosberg
and Marie-Hélène Sachet*

Introduction

The third installment of the Flora of Micronesia treats the family Convolvulaceae, with five native and two introduced (plus one doubtful) genera, including twelve probably native species and fifteen clearly introduced ones or widespread tropical weeds. It follows essentially the format of the first and second installments (*Smithsonian Contributions to Botany* 20 and 24).

Further and more complete bibliographic detail may be found in Sachet and Fosberg, *Island Bibliographies* (1955), and its *Supplement* (1971), with a complete list of serial abbreviations.

For details of the history and circumstances of the present flora, as well as an explanation of its scope and arrangement, reference may be made to the introductory pages of the first installment.

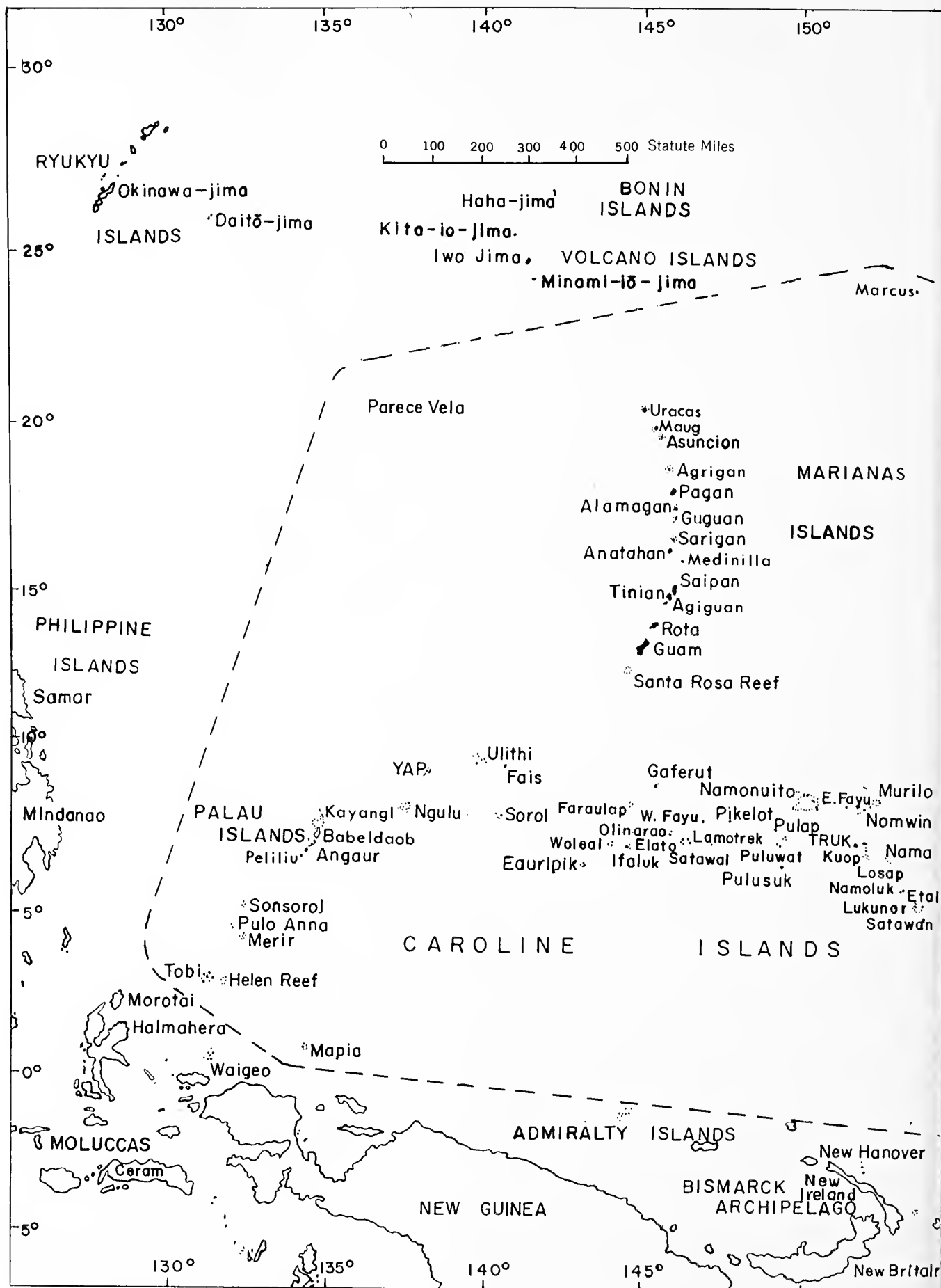
In citations of specimens, the collector's name and number are italicized and the herbaria where they are deposited are indicated only if the specimen has been examined by the authors. Herbarium symbols are according to the 6th edition of *Index Herbariorum*, Part I, compiled by Holmgren and Keuken, 1974. In this edition the symbols "HAW" for the University of Hawaii and "GUAM" for the University of Guam are introduced, differing from those used for these two herbaria in installments 1 and 2. The symbol "Fo" is used for

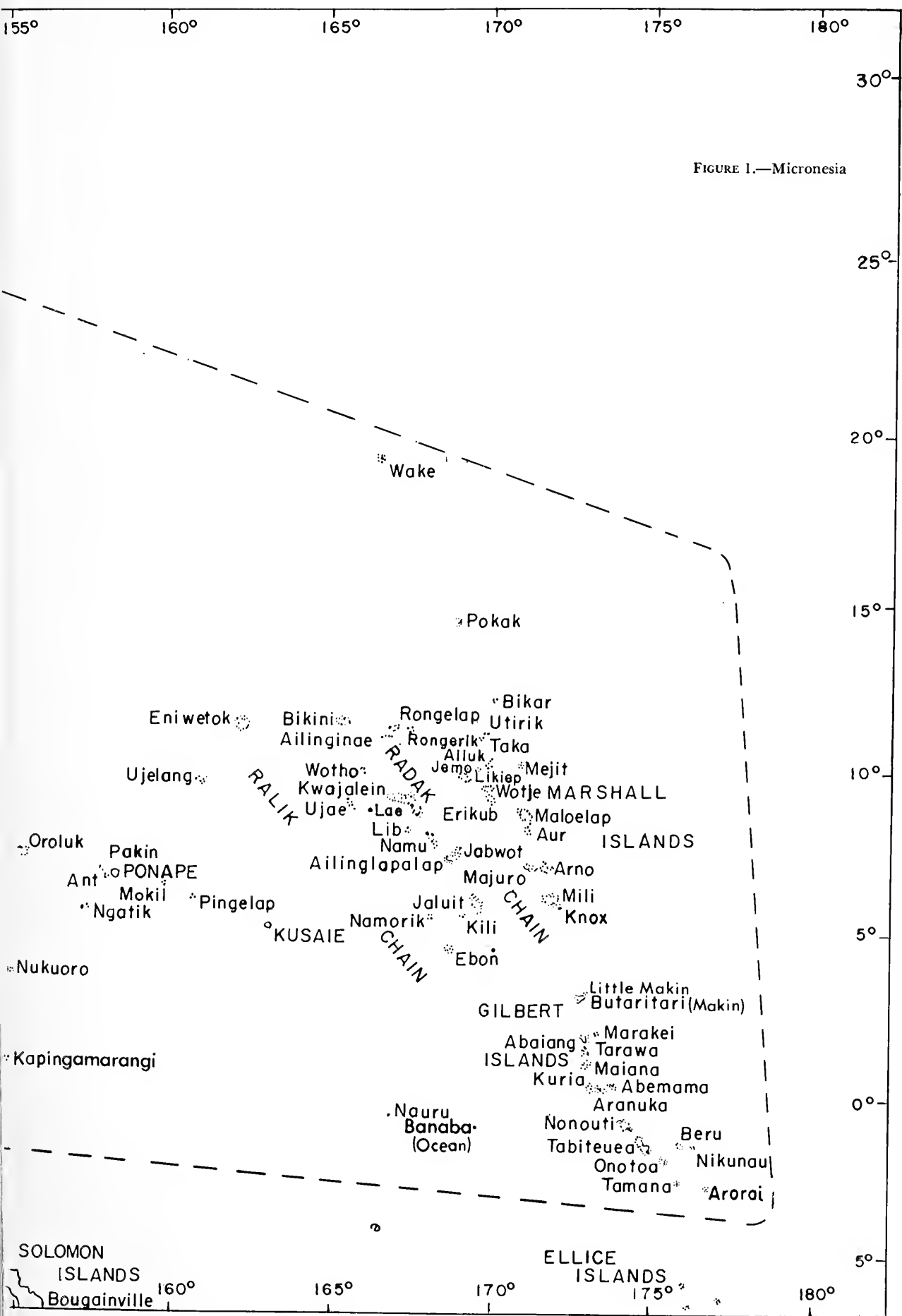
specimens still in the possession of the authors. We wish to thank, again, the authorities of the various herbaria where we have studied or borrowed material, for the privilege of using their collections and for their hospitality.

As mentioned in the first installment, we cannot list the many persons who helped us in the field, in the herbarium, and in the office. For the preparation of this chapter, however, we owe special gratitude to Miss Frances J. Corridon, who transcribed and arranged much of the geographical information and citations, and typed an earlier version of the manuscript; Mrs. Denise Ford typed the manuscript on the edityper, eliminating errors and incorporating changes and new material; Mr. Royce Oliver handled specimens, transcribed data from them, kept readily available the materials on which the treatment is based, and on occasion saved us from making or perpetuating errors; Miss Dulcie Powell, a specialist in the New World Convolvulaceae, critically checked various sections of the manuscript.

In preparing this account we have drawn freely on the valuable works of S. J. van Ooststroom on the Malaysian Convolvulaceae (1938, 1939, 1940, 1943, 1945, and van Ooststroom and Hoogland, 1953), without accepting fully all of the conclusions found there. We gratefully acknowledge our indebtedness and appreciation of the critical and meticulous work of these authors. Dr. Daniel F. Austin, contemporary authority on the family has generously made available his critical knowledge and has saved us from making a few mistakes.

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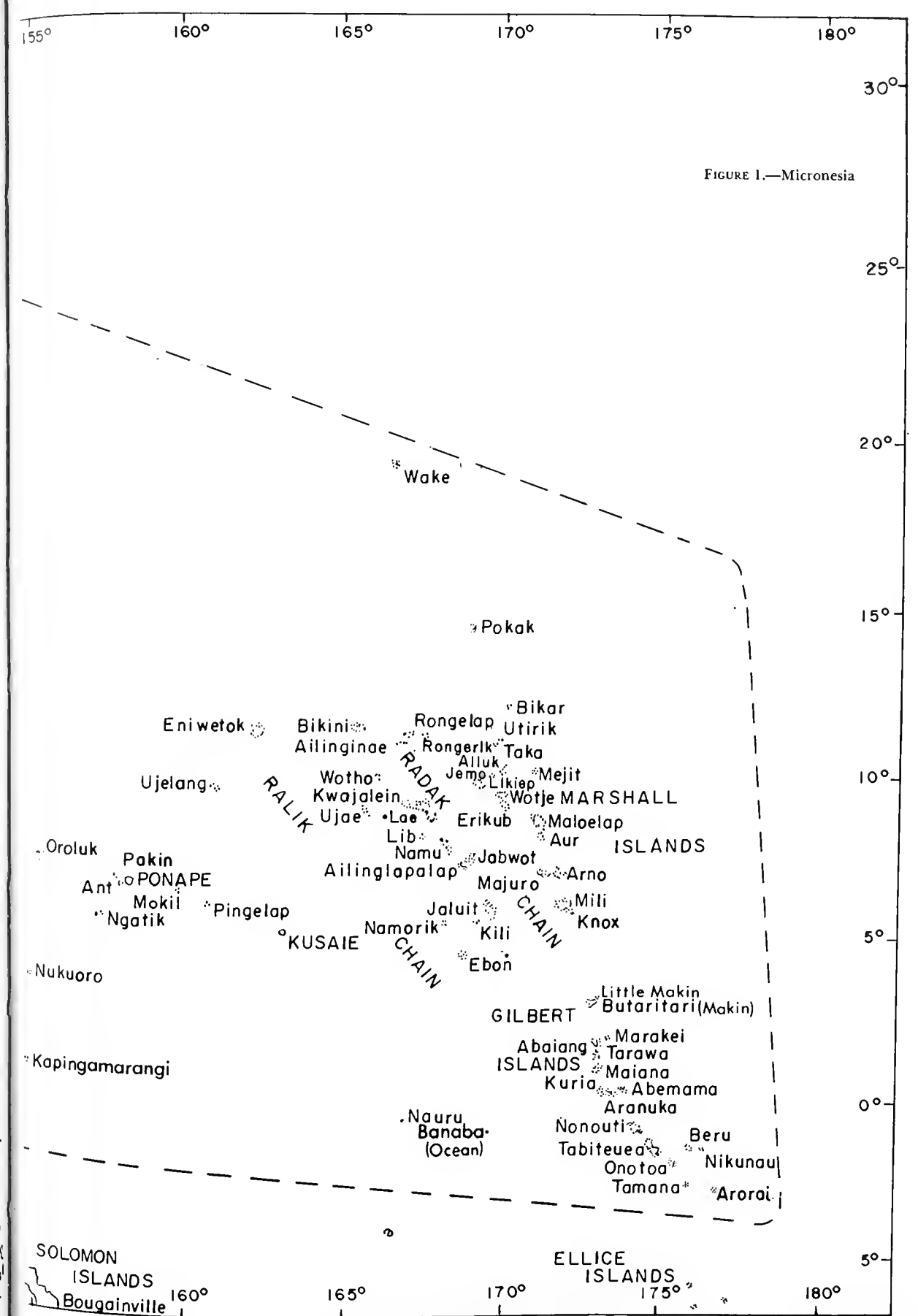
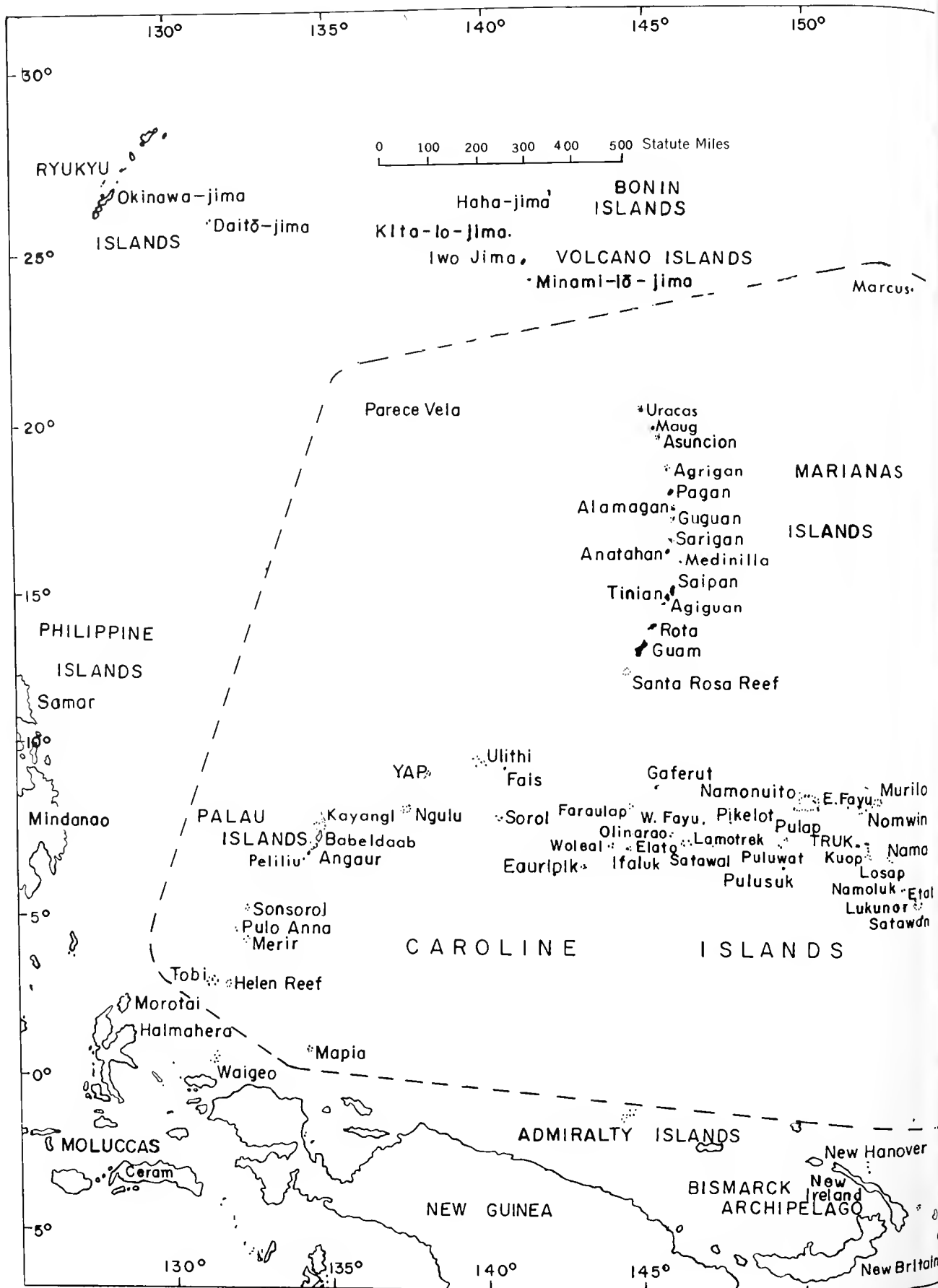


FIGURE 1.—Micronesia

We are also indebted to Mrs. M. J. van Steenis-Kruseman and Dr. W. T. Stearn for their critical work in establishing exact dates for a great many of the works cited. The dates cited with the references are ordinarily those on the title pages, with corrected dates added in square brackets. Most of the latter are taken from *Flora Malesiana I* by the above authors (1954), and from additional articles supplementary to this, by Mrs. van Steenis, published in *Flora Malesiana Bulletin*. "Taxonomic Literature" (Stafleu, 1967) was also consulted for problematic dates.

In the text we have used unpublished information in the form of personal communications from Prof. Harold St. John of the B. P. Bishop Museum, Prof. Walter Lewis of Washington University, Prof. Daniel Austin of Florida Atlantic University, Mr. Carl Stensland, retired from the U.S. Geological Survey, Prof. Joe Marshall of the University of Arizona, Mrs. M. V. C. Falanruw of the Yap Institute of Natural Science, and Mr. Donald Anderson of the H. L. Lyon Arboretum, Honolulu. We wish to express our thanks to these people for providing this information and permitting us to use it.

In the paragraph headed "Uses" under the various species, we have, where the material was not too verbose, copied more or less verbatim from field labels, field notes, published articles and books, but have used quotation marks only where they seem useful to clarify the source of the information. The sources are always provided, except in cases where the information is from our own personal knowledge.

CONVOLVULACEAE

Herbaceous or woody twiners or creepers, rarely erect herbs or shrubs (very rarely trees but not in Micronesia), frequently lactiferous but not copiously so; leaves alternate, frequently cordate, hastate, or sagittate, simple but occasionally deeply divided or palmatifid so as to appear compound, rarely pinnately divided; stipules none; calyx of 5 free sepals; corolla sympetalous, not ordinarily deeply lobed or divided; stamens 5, attached to corolla near base, or part way up tube; ovary superior, 2-, 3-, or 4-celled with 2 basal ovules in each cell, style usually single, filiform, rarely 2 and branched;

Key to Micronesian Genera of Convolvulaceae

1. Leafless, threadlike, orange or at least nongreen plants *Cuscuta*
1. Leafy plants with green color 2
2. Leaves ovate, oblong, or elliptic to linear, not cordate or otherwise lobed at base 3
3. Leaves ovate, 1-1.4 cm long, sericeous; corollas rotate or saucer-shaped; styles 2, these branched *Evolvulus*
3. Leaves oblong to linear, 2.5 cm or more long, not sericeous; corollas funnelform to campanulate; style 1, filiform 4
4. Outer sepals decurrent on pedicel *Aniseia*
4. Outer sepals not decurrent *Ipomoea aquatica*
2. Leaves variously shaped, usually cordate, in any event lobed or subcordate at base, rarely truncate or obtuse, then lobed at apex 5
5. Leaves peltate *Merremia peltata*
5. Leaves basally attached 6
6. Pollen grains smooth, anthers coiled or curved; corolla broadly funnelform or campanulate, fairly broad almost to base 7
7. Outer layer of capsule circumscissile; leaves 10 cm or more across *Operculina*
7. Capsule ultimately splitting into ovate or lanceolate valves; leaves usually 5 cm or less across; if larger, generally digitate *Merremia*
6. Pollen grains spinulose, anthers straight; corolla strongly narrowed to base 8
8. Fruiting calyx greatly accrescent, thick and spongy, closed at tip and completely hiding capsule; capsule dehiscent by 4 slits or holes between the septa; calyx in flower appearing rather truncate; leaves minutely gland-dotted beneath *Stictocardia*
8. Fruiting calyx not or only moderately accrescent, not spongy, not completely hiding capsule; capsule dehiscent in valves or irregularly; calyx, at least in flower, not appearing truncate; leaves (in Micronesian species) not gland-dotted beneath *Ipomoea*

stigmas 1-3, usually thickened; fruit a 2-, 3-, or 4-celled dehiscent or indehiscent capsule, rarely fleshy or corky, cells 1- or 2-seeded.

An important tropical family with a few Temperate Zone members; includes many widespread pioneers and weedy species, as well as tropical forest lianas.

Because of the variability, the superficial similarity between genera, and the lack of reliable vegetative characters, keys in the Convolvulaceae are not as satisfactory as might be desired. We have attempted to use vegetative characters wherever possible, but found no apparent way to avoid, in places, using obscure characters or those requiring a particular stage in the life history of the plant.

Aniseia Choisy

Aniseia Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:481, 1833.

Herbaceous vines with adventitious roots; leaves narrowed to base, usually not cordate; flowers on axillary peduncles; sepals very unequal in width, outer ones decurrent on pedicel; corolla very broadly funnellform, sericeous without; stamens much shorter than corolla, anthers straight; style single, stigmas globose to oblong; fruit a capsule dehiscent into 4 strong valves, white within.

Aniseia martinicensis (Jacquin) Choisy

Aniseia martinicensis (Jacquin) Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 8:66, 1838.—Hosokawa, ms., n.d.
Convolvulus martinicensis Jacquin, Select. Am., 26, t. 17, 1763.

Plant sparsely to densely appressed-pilose; leaves narrowly oblong to oblong-lanceolate, apex rounded, mucronate; peduncle with two bracts, the upper one occasionally bearing an abortive flower-bud, flowers single, rarely several in an umbel or short raceme; outer sepals broadly ovate, acuminate, base rounded, strongly decurrent on pedicel; corolla white, 1.5-2 cm long; valves of fruit ovate; seeds dull, sooty-brown, surface pilosulous, angles pilose.

Pantropic, widespread in tropical America, occasional in Africa, Asia, and eastward in the Pacific as far as Tonga, Fiji, and Palau.

VERNACULAR NAME.—tehelel-aul (Palau: Hosokawa, n.d.)

CAROLINE ISLANDS.—Palau: Babeldaob: Ngarath-mao, *Tuyama* in 1939 (TI).

Yap: 1 mi [1.6 km] E of Tegeren Canal, Tomil-Gagil, 40 m, *Fosberg & Cushing 46330* (US, BISH, Fo, K).

Argyreia Loureiro

Argyreia Loureiro, Fl. Cochinch., 134, 1790.
Lettsomia Roxburgh, Fl. Ind., ed. Carey & Wallich, 2:75, 1824 [non Ruiz & Pavón, 1794].

Argyreia sp.

A sterile plant seen growing in a pot in Kwajalein in 1958 probably belonged to this genus. *Argyreia nervosa* (Burman f.) Bojer is widely cultivated but not, so far, known from Micronesia unless the plant seen in Kwajalein is that species.

Cuscuta L.

Cuscuta L., Sp. Pl., 124, 1753; Gen. Pl., ed. 5., 60, 1754 [=1753].

Threadlike or stringlike, parasitic, yellow or orange, rarely greenish, vines, twining, without roots except when very young, attached to host (or to themselves) by minute haustoria; leaves reduced to minute inconspicuous scales; flowers in small, sometimes swollen, cymose clusters, small, white; calyx of 5 lobes, united at least to above base, equal, thin; corolla 5-lobed, urceolate or campanulate, frequently with scalelike appendages within at bases of stamens; ovary 2-celled, ovules 2 in a cell, styles 1 or usually 2, stigmas capitate to linear; fruit a thin-walled capsule, indehiscent, breaking irregularly, or circumscissile; seeds usually 4.

A widespread genus of many species, one of which has recently been introduced into Yap.

Cuscuta campestris Yuncker

Cuscuta campestris Yuncker, Mem. Torr. Club, 18:138, 1932.

Stems threadlike, with occasional concave scales at ramifications, haustoria irregularly distributed; inflorescences somewhat thickened, forked, cymules irregularly helicoid or subscorpioid, with obovate hyaline bracts up to 2 × 1 mm, obtuse, flattish; flowers pedicellate, about 3 mm wide, closely subtended by a tiny obtuse scale; calyx broadly cup

shaped, lobed to $\frac{1}{3}$ – $\frac{1}{2}$ its length, lobes semi-circular, slightly overlapping at sinuses; corolla tube broad, included, lobes about equalling tube, exerted, ovate, obtusish but mucronulate, tending to be reflexed, about 1 mm long; scales with several blunt linear processes on each side of filament; stamens exerted, filaments inserted in sinuses, anthers broadly elliptic, curved, about 0.6 mm long, filaments about as long; ovary with apex depressed, styles filiform, about 1 mm long, stigmas capitate; fruit depressed globose, about 2.5 mm across, with a large hole in top between persistent styles; walls hyaline translucent; seeds about 1 mm across, subglobose with concavities from crowding, dark dull brown with black spot (hilum?), surface dull, cellular-reticulate.

Recently adventive, native of North America, widespread but not too common in the south Pacific from Indonesia to Fiji, Tahiti, Tuamotus, and Christmas Island. Said to have been brought to Yap from Hawaii, but this seems unlikely, as another distinct species, *C. sandwichiana* is the one found there. Parasitic on *Vigna marina* and grasses along lagoon beach.

USE.—Worn as garlands by young people, according to M. V. C. Falanruw.

CAROLINE ISLANDS.—Yap: Colonia, along lagoon (Chamorro, or Benjo, Bay), 1972, *Falanruw* 2732 (US).

Evolvulus L.

Evolvulus L., Gen. Pl., ed. 6, 152, 1764 [=1762].

Prostrate to ascending herbs; flowers 1–few on axillary peduncles, the peduncle, if 1-flowered, with a pair of bracts part way up; corolla saucer shaped to very broadly campanulate, entire or almost so; stamens included, or at least shorter than corolla; anthers straight; styles 2, forked, stigmas elongate; fruit a dehiscent capsule, 2-celled, 4-seeded; seeds smooth, black.

A pantropical genus, principally American, but with two wide-ranging species, one of which is known in Micronesia from the Marianas.

Evolvulus alsinoides (L.) L.

Evolvulus alsinoides (L.) L., Sp. Pl., ed. 2, 392, 1762.—Hoso-

kawa, Trans. Nat. Hist. Soc. Formosa, 25:35, 1935; ms., n.d. *Convolvulus alsinoides* L., Sp. Pl., 157, 1753.

A wiry pubescent herb, many stems ascending to spreading from a root crown, sparsely branched; leaves ovate, small, densely sericeous, acute, mucronate, sessile; flowers pale bluish, very delicate, less than 1 cm across; capsule globose, 3–4 mm across.

A pantropical species known in Micronesia from Saipan and Tinian, where it grows on open pitted coral limestone on coastal terraces, uncommon.

MARIANAS ISLANDS.—Saipan: "Saipan borealis," *Okabe* in 1941 (TI); Raurau, 50 m, *Hatusima* 10679 (FU), 10692 (FU).

Tinian: Near Tyuro village, *Hosokawa* 7721 (A, BISH); "Palm Beach," about 1 mi [1.6 km] S of Faibus (San Hilo) Point, W coast of N half of island, *Fosberg* 24865 (US, BISH, Fo).

Ipomoea L.

Ipomoea L., Sp. Pl., 159, 1753; Gen. Pl., ed. 5, 76, 1754 [=1753].

Quamoclit Moench, Meth., 453, 1794.

Batatas Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:434, 1833.

Pharbitis Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:438, 1833.

Calonyction Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:441, 1833.

Twining herbaceous to woody vines, creepers, or rarely erect herbs or shrubs; leaves simple, usually cordate, entire to deeply divided or dissected, petiolate; peduncles axillary, flowers solitary or cymose; corolla narrowly funnelliform or campanulate, regular to somewhat zygomorphic, entire to somewhat 5-lobed, plicate in bud, median lines heavy, intervening areas membranous; anthers included or exerted, straight; pollen grains spinulose; style 1, filiform, elongate, stigmas globose, 1 or usually 2 or 3; fruit a capsule, dehiscing into 4 valves or irregularly.

A large pantropical and warm-temperate genus, found on almost all Pacific islands, including those in Micronesia; many of the species widespread and weedy, found on beaches and in disturbed places, a few found in lowland forests. "Morning glory" is the name in general English usage for several species.

Key to Micronesian Species of *Ipomoea* L.

1. Leaves pinnately divided into narrowly linear or filiform lobes *I. quamoclit* 2
1. Leaves not pinnately divided 2
2. Leaves bilobed at apex *I. pes-caprae* 3
2. Leaves not bilobed 3
3. Leaves digitately cut or divided 4
4. Leaves divided not quite to base 5
5. Herbaceous creeper; calyx 8 mm or less long; corolla thin, 3-4 cm long *I. batatas*
5. Robust twining climber; calyx 1 cm long; corolla firm, 6 cm long *I. mauritiana*
4. Leaves divided to base *I. horsfalliae*
3. Leaves not digitately divided 6
6. Sepals with longitudinal keels or ribs, these deeply dentate toward base; leaves hastate or sagittate *I. setifera* var. *fimbriosepala*
6. Sepals without longitudinal keels or ribs 7
7. Leaves appreciably longer than wide; plants not twining 8
8. Leaves hastate, truncate, sagittate, or cordate at base, ordinarily less than 6 cm long; petioles fleshy; creeper; corolla 3-5 cm long *I. aquatica*
8. Leaves strongly cordate, well over 6 cm long; petioles not conspicuously fleshy; an erect or ascending herb; corolla 7-9 cm long *I. fistulosa*
7. Leaves nearly, or at least $\frac{3}{4}$, as wide as long, orbicular or frequently more or less triangular, hastate, or trilobate; plants twiners 9
9. Sepals lanceolate, over 1 cm long, conspicuously acuminate *I. indica*
9. Sepals oblong, elliptic, ovate, or orbicular, not long-acuminate 10
10. Inner sepals broad toward apex, subtruncate 11
11. Sepals conspicuously mucronate; corolla narrowly funnelform-salverform, usually red *I. hederifolia*
11. Sepals not or only slightly mucronate; corolla broadly funnelform-campanulate, purple *I. littoralis*
10. Sepals oblong to ovate or orbicular, not conspicuously broadened apically 12
12. Leaves more or less triangular in general outline, entire or variously lobed; a creeper *I. batatas*
12. Leaves orbicular, strongly cordate; twiners 13
13. Slender vine; sepals elliptic oblong, 4-6 mm long; corolla 2-3 cm long 14
14. Sepals glabrous, neither fimbriate nor ciliate; corolla 20-25 mm long 15
15. Peduncles bearing 1 or several very slender pedicels, not notably umbelloid; leaves orbicular cordate *I. obscura*
15. Peduncles bearing several stout stiff pedicels in an umbelloid or compactly cymose arrangement; leaves tending to be triangular hastate or triangular cordate *I. sepiaria*
14. Sepals with at least some hairs, especially on margins; corolla 15-20 mm long *I. triloba*
13. Coarse vines; sepals broadly ovate or orbicular, usually well over 6 mm long; corolla with tube well exerted, white, usually 10 cm or more long 16
16. Sepals strongly mucronate; stem usually with fleshy spinelike processes; seeds glabrous *I. alba*
16. Sepals rounded at apex, at most very slightly mucronate; stem smooth; seeds pubescent *I. macrantha*

Ipomoea alba L.

Ipomoea alba L., Sp. Pl., 161, 1753.—Stone, Micronesica, 6:490, 1971.

Convolvulus aculeatus L., Sp. Pl., 155, 1753 [non *Ipomoea aculeata* Blume, Bijdr., 715, 1826].

Ipomoea bona-nox L., Sp. Pl., ed. 2, 228, 1762.

Calonyction bona-nox (L.) Bojer, Hort. Maur., 227, 1837.

Calonyction aculeata (L.) House, Bull. Torr. Bot. Club, 31:590, 1904.

Calonyction album (L.) House, Bull. Torr. Bot. Club, 31:590, 1904.—Kanehira, Enum. Micr. Pl., 398, 1935.

Extensive, usually glabrous liana, lower stems thick but scarcely woody, frequently more or less beset with fleshy spinelike processes; leaves cordate, entire to somewhat lobed; peduncles 1-several-flowered, pedicels often thickened; flowers slightly zygomorphic, sepals strongly mucronate, 5–15 mm long; corolla white, open at night, closing as the day warms up, up to 15 cm long, funnellform but almost salverform, tube well exerted; stamens and styles somewhat exerted; stigmas 2; capsule ovoid; seeds glabrous.

Pantropical, said to be of American origin (van Ooststroom, 1940:550), widely cultivated as the "moon-flower," frequently established; in Micronesia known from Guam, where it has been found climbing in roadside vegetation and in scrub around openings at tops of cliffs on the east side of the island; may be planted elsewhere as an ornamental.

VERNACULAR NAME.—moon-flower (English)

MARIANAS ISLANDS.—Guam: just S of Talofoto Bay, 30 m, *Fosberg 31260* (US, BISH, Fo, NY, L); Ylig Point, *Stone 4686* (BISH).

Ipomoea aquatica Forskål

Ipomoea aquatica Forskål, Descr. Pl. Fl. Aeg.-Arab., 44, 1775.—Otobed, ms., 1967; Guide List Plants Palau Is., 1971.—Stone, Micronesica, 6:491, 1971.—Fosberg, Falanruw, and Sachet, Smithsonian Contr. Bot., 22:37, 1974.

Ipomoea reptans sensu Merrill, Phil. Jour. Sci. Bot., 9:132, 1914.—Kanehira, Enum. Micr. Pl., 400, 1935.—Pelzer, ms., 1946. [Non (L.) Poiret, Encycl. Méth. Suppl., 3:460, 1813 (1814).]

Creeping or floating, glabrous, stem rather fleshy, with adventitious roots; leaves with base truncate, cordate, sagittate, or hastate, lobes from broad to narrow, petioles fleshy; peduncles 1-few-flowered,

outer sepals glabrous, ovate-oblong, obtuse; corolla funnellform, 3–5 cm long, white or lilac, purple in center; stamens and styles included, stigmas 2; capsule ovoid, 8–10 mm long; seeds pubescent.

Throughout the Old World tropics, spontaneous and planted as a potherb, especially in China and Thailand. In Micronesia, planted or spontaneous in marshy places or in open water; found in the Marianas—Pagan, Saipan, Tinian, Rota, Guam; in the Carolines—Palau, Yap, Ulithi, Truk, Satawan; and in the Gilberts—Tarawa.

USES.—Leaves cooked as greens especially to serve with fish (Guam: *Whiting C29*). Eaten as potherb (Koror: *Fosberg & Evans 47432*). Eaten fried with meat (Ulithi: *Fosberg 46965*). Young tips eaten (Truk: *Fosberg 24417*). Introduced by Japanese. Makes an excellent vegetable very much like our spinach (Truk: Pelzer, 1946).

VERNACULAR NAMES.—

akankōng (Guam: *Costenoble* in 1906)
cancon (Guam: Merrill, 1914; *Whiting C29*)
kangkung (Guam: *Whiting C29*)
kankuñg (Guam: *Costenoble* in 1906)
kankan (Guam: *G.E.S. 236*)
kangum (Palau: *Blackburn 143*)
kangkum (Palau: Otobed, 1967, 1971)
swamp cabbage (Palau: Otobed, 1967, 1971)
kangkīng (Yap: *Wong 310*)
köngköng (Yap: *Wong 310*)
kangkong (Ulithi: *Fosberg 46965*)
aseri (Truk: Pelzer, 1946)
seeri (Truk: *Wong 210*)
seri (Truk: *Anderson 754*)
horenso [Japanese] (Satawan: *Anderson 1103*)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Pagan: Fresh Water Lake, *Fosberg 31393* (US, BISH, Fo).

Saipan: *Cameron* in 1944 (BISH); *Momose* in 1930 (TI); Kagman Peninsula, *Courage 20* (US); S of Mt. Tapotchau, in swamp, 10 ft [3 m], *Hosaka 2912* (US, BISH); marshes and ponds about 1 km S of Lake Susupe, SE of Chalankanoa, *Fosberg 25275* (US, BISH).

Tinian: *Okatani 66* (FU), 67 (FU).

Rota: Slopes above As Malote, S side of island, 250 m, *Fosberg 31884* (US, BISH, Fo, NY, L).

Guam: *G.E.S. 236* (BISH, P), 48 (US, BISH, NSW); *Costenoble* in 1906 (US); Merrill, 1914:132; Manilao, *Whiting C29*; Asan Pt., 1 m, *Anderson 39*

(US, BISH, Fo, NY, L); Agaña Swamp, near Agaña, *Fosberg 31244* (US, BISH, Fo, NY, L); Agaña Spring, 10 m, *Evans 1714* (US, HAW); Umatac, *Fosberg 35652* (US); 1 mi [1.6 km] S of Piti, *Glassman 290* (Fo); 2 mi S of Agat village, *Moore 277* (US).

CAROLINE ISLANDS.—Palau: Koror: Ngerebe'ed, *Fosberg & Evans 47432* (US); Ngerbeched, *Blackburn 143* (US). Peliliu: 3–4 m, *Fosberg 25872* (US, BISH, Fo). Angaur: central part, 4 m, *Fosberg 25891* (US, BISH, Fo, NY, L).

Yap: *Wong 310* (BISH).

Ulithi: Falalap I. 0 m, *Fosberg 46965* (US, Fo, BISH, K, NY, MO).

Truk: *Wong 210* (US, BISH, Fo). Moen: Moen village, *Anderson 754* (US, BISH, Fo, NY, L); Mechetiu (Metitui) village, Bou Bay, *Fosberg 24417* (US, BISH, Fo).

Satawan: *Anderson 1103* (US, BISH, Fo, NY, L).

GILBERT ISLANDS.—Tarawa: Bikenibeu, *Adair 191* (BISH, US).

Ipomoea batatas (L.) Lamarck

Ipomoea batatas (L.) Lamarck, Tabl. Encycl., 1:465, 1791 [1793].—Chamisso, Rem. Op., 184, 1821.—Engler, Notizbl., 1:226, 1897.—Christian, Caroline Islands, 334, 1899.—Volkens, Bot. Jahrb., 31:473, 1901.—Fritz, Mitt. deutsch. Schutzgeb., 15:102, 1902.—Safford, Cont. U.S. Nat. Herb., 9:247, 1905.—von Prowazek, Deutsch. Marianen, 119, 1913.—Merrill, Phil. Jour. Sci. Bot., 9:131, 1914.—Krämer in Thilenius, Erg. Süds. Exp., IIB, 10(1):182, 389, 1937.—Burkill, Adv. Sci., 7:446, 1951.—St. John, Pac. Sci., 5:285, 1951.—Glassman, Bishop Mus. Bull., 209:99, 1952.—Luomala, Bishop Mus. Bull., 213:89, 1953.—Fosberg, Atoll Res. Bull., 39:17, 1955.—Massal and Barrau, So. Pac. Comm. Techn. Pap., 94:24, 1956.—Catala, Atoll Res. Bull., 59:97, 1957.—Murai et al., Trop. So. Pac. Is. Foods, 134, 1958.—Stone, Pac. Sci., 13:103, 1959.—Fosberg and Sachet, Atoll Res. Bull., 92:31, 1962.—Alkire, Illinois St. Anthro., 5:77, 1965.—Whiting, ms., 1965.—Otobed, ms., 1967; Guide List Plants Palau Is., 1971.—Fosberg and Sachet, Atoll Res. Bull., 123:13, 1969.—Stone, Micronesica, 6:491, 1971.—Yen, Bishop Mus. Bull., 236:270–271, 342, 347, 1974.—Fosberg, Falanruw, and Sachet, Smithsonian Contr. Bot., 22:37, 1975.

Convolvulus batatas L., Sp. Pl., 154, 1753.—Gaudichaud, Bot. Voy. Uranie, 76, 84, 1826.—Safford, Contr. U.S. Nat. Herb., 9:247, 1905.

Glabrous creeper with enlarged fusiform edible roots, thick stems, not twining; leaves with long petioles, blades more or less triangular, acuminate, more or less cordate to sub-truncate at base, sides entire or variously cut or lobed; seldom seen

flowering; peduncles umbellately or irregularly branched at summit into 1–4 short pedicels, bracts very small; sepals glabrous, oblong to oblong-ovate, up to 8 mm long, obtuse to acute, mucronate; corolla light purple, campanulate, 3.5–4 cm long; stamens and style less than half length of corolla.

Pantropical in cultivation, of American origin. In Micronesia known from the Marianas—Agrigan, Pagan, Alamagan, Sarigan, Saipan, Tinian, Rota, Guam; Carolines—Palau, Yap, Ulithi, Fais, Eauripik, Woleai, Faraulap, Ifaluk, Lamotrek, Satawal, Murilo, Nomwin, Truk, Namoluk, Satawan, Ponape, Kusaie; Wake; Marshalls—Kwajalein, Likiep, Ailinglapalap, Majuro, Arno, Jaluit; Gilberts—Butaritari (Makin), Tarawa.

The species is cultivated on all inhabited high islands, and with some difficulty on many of the low coral islands. In areas where soil is thin, it is planted in hills that have been raked together (Rota); in taro pits, it is planted on hills of soil extending above water table (Ifaluk); in abandoned gardens and fields, it occasionally persists for a time after cultivation. There are a great many horticultural varieties with different leaf outlines and tuberous roots of different colors, shapes, and edible qualities. It is commonly known in English as “sweet potato.” Most of the compound names listed below are varietal names introduced to Micronesia by the Spanish, who brought with them the name *camote*, a derivative of the Aztec *camotl*, which has given rise to most of the Micronesian names. Yen (1974) has made an extensive study of the occurrence and differentiation of the sweet potato in Oceania.

USES.—Toward the end of World War II when the Japanese, isolated on Truk, were short of food, coconut and breadfruit plantings were cleared and sweet potatoes were planted in great quantities, as the authorities felt this to be the way to produce the largest amount of food in the shortest time. After the war the Trukese, not caring much for sweet potatoes, traded them to the people of the surrounding atolls for coconuts which were in short supply on Truk.

Tuber used as a starch staple, tender leaves (“punkan kamote”) cooked as greens (Guam: *Whiting C30*). Roots used as a food. “Natives seldom grew them for their own use but . . . exchanged the sweet potatoes for . . . other things brought by ships” (Guam: Safford, 1905). “Formerly

an important crop" (Pagan: *Fosberg 31357*). Cultivated but of little importance (Lamotrek: Alkire, 1965).

VERNACULAR NAMES.—

sweet potato [English]
 kamute (Saipan: Safford, 1905; von Prowazek, 1913)
 batatas (Guam: *Whiting C30*)
 camote agrigan (Guam: Gaudichaud, 1826; variety said by Don Luis de Torres to have been found on Agrigan I. at the spot where a ship had foundered)
 camote amarillo (Guam: *Costenoble 1159, 1191*)
 camote chatda (Guam: *Costenoble 1161*)
 camote hispani (Guam: Gaudichaud, 1826)
 camote manila (Guam: Gaudichaud, 1826)
 camote patas-ñgañga (Guam: *Costenoble 1160*)
 camote patas nganga (Guam: *Nelson 411*)
 camoten dago (Guam: *Costenoble 1162*)
 camote-n-yap (Guam: *Costenoble 1163*)
 comote (Guam: written in USDA copy of Merrill, 1914:131 against *G.E.S. 222*)
 kamote (Guam: Safford, 1905; *Whiting C30*)
 kamote amarinya (Guam: *Nelson 429*)
 kamoten amariya, kamoten chada, kamoten dago, kamoten mamaka, kamoten peru, kamoten sap (Guam: *Whiting, ms., 1965*)
 kamute, kamuti, kumote (Guam: Yen, 1974)
 patas nana, patas sapanese (Guam: *Whiting, ms., 1965*)
 kumal (Caroline: Yen, 1974)
 emutii (Palau: Otobed, 1967, 1971)
 komuti (Palau: Yen, 1974)
 theb-el-barath (Palau: Yen, 1974)
 tulingut-al-barath (Palau: Christian, 1899)
 camotes (Yap: Chamisso, 1821)
 kamot gagil (Yap: *Wong 478*)
 kamot gala ficefic (Yap: *Wong 480*)
 kamot ni benikawa (Yap: *Wong 389*)
 kamot ni beykngo (Yap: *Wong 398*)
 kamot pao (Yap: *Wong 479*)
 kamot yaur (Yap: *Wong 430*)
 kamott (Yap: Volkens, 1901)
 camote (Ulithi: *Fosberg & Wong 25522*)
 kamote (Ulithi: *Fosberg & Evans 46365*)
 komoti benikawa (Ulithi: *Lessa 71*)
 komoti bwech mechakhchokh (Ulithi: *Lessa 75*)
 komoti bwech ramasou (Ulithi: *Lessa 76*)
 komoti chawöl (Ulithi: *Lessa 74*)
 komoti matarang (Ulithi: *Lessa 77*)
 komoti ramasou (Ulithi: *Lessa 79*)
 komoti rangrang (Ulithi: *Lessa 78*)
 komotiel okinawa (Ulithi: *Lessa 72*)
 kotiel meriken (Ulithi: *Lessa 73*)
 gamuti (Fais: Krämer, 1937)
 homote (Eauripik: *Fosberg & Evans 47126*)
 komote (Woleai: *Evans 494, 488*)
 yamotaa (Woleai: *Wong 19*)
 gamuti (Ifaluk: *Abbott and Bates 100*)
 hamote (Ifaluk: *Fosberg 47225*)
 gamoti (Lamotrek: Krämer, 1937)

kamate (Lamotrek: *Fosberg 46734*)
 komote (Satawal: *Fosberg 46866*)
 potato (Nomwin: *Evans 1122*, local informant Ruda)
 kamal (Truk: Yen, 1974)
 kamuti (Truk: Murai et al., 1958)
 komuz (Truk: *Wong 209*)
 kumote (Satawan: *Anderson 1042*)
 Kap-en-tomara (Ponape: Yen, 1974)
 juweet potato (Majuro: *St. John 21414*)
 biteto (Arno: *Anderson 3684*)
 kumara (Gilberts: Luomala, 1953)
 koumara (Butaritari: Yen, 1974)
 uara (Butaritari (Makin): Yen, 1974)
 te kumara (Tarawa: *Catala 155*)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MICRONESIA.—Massal and Barrau, 1956:24.

MARIANAS ISLANDS.—Agrigan: Gaudichaud, 1826:76, quoting Don Luis de Torres.

Pagan: Near Salt Water Lake, W side of island, *Fosberg 31357* (US); 30 m from shore, *Anderson 595, 596* (US, BISH, Fo).

Alamagan: Fritz, 1902:102.

Sarigan: N of village, *Evans 2422* (US, BISH, Fo, NY).

Saipan: von Prowazek, 1913:119.

Tinian: Gaudichaud, 1826:84; W coast, 100 ft [30 m], *Hosaka 2869* (US, BISH, Fo); Mt. Lasso, E ridge, 300 ft [90 m], *Hosaka 2890* (US, BISH, Fo).

Rota: Track from near Ponuya Pt. to water caves 350–500 m, *Evans 2186* (US, Fo, HAW, MO).

Guam: *G.E.S. 222* (US, BISH, NSW); *Nelson 429* (BISH), *411* (BISH); *Costenoble 1159, 1160, 1161, 1162, 1163, 1191* (all US); Merrill, 1914:131; Burkill, 1951:446 (said to have been in Guam in 1564); Manilao, *Whiting C30* (US); Inarajan, 100 m, *Evans 1493* (US).

CAROLINE ISLANDS.—Palau: Babeldaob: Garamiscan Colony, Garamiscan River, 0–20 m, *Fosberg 25762* (US, BISH, Fo). Garikiai: *Takamatsu 1735* (BISH). Angaur: depression in hill on NW corner of island, 25 m, *Fosberg 25907* (US, BISH).

Yap: *Wong 430* (US, BISH, Fo, NY), *398* (US, BISH, Fo, NY), *389* (US, BISH, Fo), *478* (US, BISH, Fo), *480* (US, BISH, Fo), *479* (US, BISH, Fo); *Koidzumi* in 1915 (TI); Chamisso, 1821:184 (brought from Philippines according to Cantova); trail to Inuf, SE Yap, *Cushing 426* (US).

Ulithi: Mogmog I., *Lessa 71, 72, 73, 74, 75, 76, 77, 78, 79* (all BISH); *Fosberg and Wong 25522*

(US, BISH); *Fosberg & Evans 46365* (Fo); Fassarai I., *Hosaka 3206* (US, BISH, Fo, NY).

Fais: Inland from S end of island, 15 m, *Fosberg 46662* (US).

Eauripik: Eauripik I., *Fosberg & Evans 47126* (Fo).

Woleai: Utagal I., 1–2 m, *Wong 19* (US, BISH, Fo, NY, L); Falalap I., *Evans 494* (US, BISH, Fo), 488 (Fo).

Faraulap: Faraulap I., *Fosberg & Evans 47371* (US).

Ifaluk: Ifaluk I., *Fosberg 47225* US, HAW); Fala-lap I., *Abbott & Bates 100* (US), *Fosberg 47249* (US, Fo, HAW).

Lamotrek: Lamotrek I., *Fosberg & Evans 46734* (Fo).

Nomwin: Fananu I., *Evans 1122* (US, HAW).

Murilo: Ruo Islet, Stone 1959:103.

Satawal: N side, *Fosberg 46866* (US).

Truk: *Wong 209* (US, BISH, Fo); *Koidzumi* in 1915 (TI, mounted with *I. mauritiana*). Moen: *Hosaka 2698* (US, BISH, Fo). Fefan: 50 ft [15 m], *Hosaka 2744* (US, BISH, Fo, NY), 2743 (US, BISH, Fo, NY, L); E side, Mesa village, 75 m, *Fosberg 24516* (US, BISH).

Namoluk: Introduced from Guam, von Prowazek, 1913:119.

Satawan: Ta I., *Anderson 1042* (US, BISH, Fo, NY, L).

Ponape: Nanipiru, 150 ft [45 m], *Hosaka 3530* (US, BISH, Fo).

Kusaie: Valley S of Lela (Lele) Harbor, 1–5 m, *Fosberg 26646* (US, BISH).

WAKE ISLAND.—*Fosberg 34449* (US, BISH); *Gaston* in 1953 (BISH).

MARSHALL ISLANDS.—Radak [Chain]: s.l. *Eschscholtz*, s.n. (LE); s. coll. [*Eschscholtz*], *Herb. Fischer* (LE).

Kwajalein: Kwajalein I., seaward side of airfield, 0–4 m, *Fosberg 48055* (US, BISH).

Likiep: Likiep I., *Fosberg 27038* (US, BISH).

Ailinglapalap: Bikajle (Bigatyelang) I., *Fosberg 26871* (US, BISH).

Majuro: Majuro I., *St. John 21,414* (BISH); Laura (W end of island), *Fosberg 26940* (US, BISH).

Arno: Ine I., *Anderson 3684* (US, BISH, Fo).

Jaluit: Engler 1897:226; Imruj I., *Fosberg 26748* (US, BISH).

GILBERT ISLANDS.—Luomala 1953:89.

Tarawa: *Catala 155* (P); Betio PWD, *Adair 136* (US).

Ipomoea fistulosa Martius ex Choisy

Ipomoea fistulosa Martius ex Choisy in de Candolle, Prodr., 9:349, Jan 1845.—Stone, Micronesica, 6:491, 1971.

Batatas? crassicaulis Benth. Bot. Voy. Sulph., 134, Apr 1845.

Ipomoea crassicaulis (Benth.) Robinson, Proc. Amer. Acad., 51:530, 1916.

Erect, thick-stemmed suffrutescent herb or shrub, to 2 m or more tall, subglabrous or minutely puberulent; leaves ovate-cordate, much longer than wide, acuminate, petioles tending to be shorter than leaves; peduncles heavy, shorter than, to as long as, leaves, dichotomously cymosely branched above, many-flowered; bracts scale-like to obsolete, caducous; sepals orbicular, inner ones very minutely sericeous, about 5 mm long; corolla narrowly campanulate, limb strongly flaring, very minutely sericeous without, lilac; stamens unequal, less than half as long as corolla; capsule ovoid, about 8 mm long, seeds copiously pubescent (we have not seen seeds in Micronesian specimens as yet).

This species is considered a subspecies of *Ipomoea carnea* Jacquin by Dr. D. F. Austin (ms., pers. comm.), as intermediate individuals are occasionally found. *Ipomoea carnea* is an Andean species (Colombia to Peru) with suborbicular-cordate-acuminate soft pubescent leaves, woody but twining in habit, with corollas 7.5–10 cm long. *Ipomoea fistulosa* is shrubby, ascending to erect, with thick stems that do not twine, leaves with basal part very broadly oblong cordate, distal part elongate triangular long acuminate, subglabrous to minutely puberulent, corollas usually somewhat less than 7.5 cm long. It is a very uniform species, at least as far as can be seen from herbarium material and as a widely introduced tropical ornamental and escape. For the present we prefer to maintain it as a distinct species.

Tropical American in origin, widely cultivated and naturalized in the Old World Tropics; in Micronesia: Marianas—Tinian, Guam; Carolines—Palau, known from Koror at least since 1932. Cultivated and sparingly naturalized near dwellings, not spreading rapidly, probably because it rarely sets seeds.

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Tinian: *Okatani* 2 (FU); Marpo valley E of Tinian (former town), SE part of island, 60 m, *Fosberg* 24816 (US, BISH, Fo, NY, L).

Guam: "Base 18" (Apra Heights), 90 m, *Fosberg* 35225 (US, BISH, Fo, NY, L); Manguuao, 65 m, *Fosberg* 35605 (US, BISH, Fo, NY, L); Barrigada village, *Stone* 4987 (BISH); Mangilao-Barrigada road, cultivated, *Stone* 4002 (BISH); road Barrigada to Mangilao, 60 m, *Evans* 1453 (US, Fo, HAW, K, MO, NY).

CAROLINE ISLANDS.—Palau: Koror: *Tuyama* in 1939 (TI); *Kanehira* 2070 (FU, NY); Koror village, 5 m, *Fosberg* 32458 (US, BISH, Fo); road from hospital to Ngerebe'ed, *Blackburn* 159 (US); $\frac{1}{8}$ mi [0.2 km] from Sansaro intersection, *Salsedo* 59 (US).

Ipomoea hederifolia L.

Ipomoea hederifolia L., Syst. Nat., ed. 10, 925, 1759.—O'Donell, Lilloa, 29:22–59, 1959.

Ipomoea coccinea sensu auct. plur. [non L., Sp. Pl. 160, 1753]. *Ipomoea angulata* Lamarck, Tabl. Encycl., 1:464, 1791 [1793]. *Quamoclit coccinea* sensu auct. plur. [non (L.) Bojer, Hort. Maur., 224, 1837].

Herbaceous glabrous twiner; leaves ovate-cordate, entire or more or less lobed or angled; peduncles much exceeding leaves, forked in upper part, forming a dichasium; bracts minute, scalelike; flowers several to many; sepals unequal, outer shortly oblong, inner obovate, apex broadly rounded or truncate, all with very prominent mucros, up to as long as body of sepal; corolla narrowly funnellform-salverform, red with yellowish tube, 2.5–3 cm long; stamens and style exserted; stigma 1, globose; capsule globose, dissepiments persistent, hyaline; seeds black, pubescent.

Micronesian material would, at least in part, go to *I. angulata*, but the supposed distinctions between this and *I. hederifolia*, especially length of peduncle and development of a dichasium, are matters of degree that seem more individual variations than specific differences.

The nomenclature and differences between this species and *Ipomoea coccinea* L. are clarified by O'Donell (1959:22–59).

Tropical American in origin, cultivated and naturalized throughout the warmer parts of the

world; in Micronesia sparingly naturalized in Saipan and Tinian. Found around dwellings, disturbed places, and old fields.

MARIANAS ISLANDS.—Saipan: Marpi, *Courage* 66 (US).

Tinian: Mt. Lasso, *Hosaka* 2828 (US, BISH, Fo).

Ipomoea horsfalliae Hooker

Ipomoea horsfalliae Hooker, Bot. Mag., 61:pl. 3315, 1834.—Stone, Micronesica, 6:492, 1971.

Glabrous, rather coarse, extensively climbing twiner, somewhat woody; leaves pedately 5–7-parted to base; peduncles openly and irregularly cymosely branched, many-flowered; sepals ovate, obtuse; corolla bright purple, firm, waxy, narrowly campanulate, 3–4 cm long; stamens slightly exserted, style more so; stigma 1(?), depressed-globose.

Native to the West Indies, at least Puerto Rico and Jamaica; planted elsewhere in the tropics as an ornamental; in Micronesia seen on Guam only; rare, planted, probably not fruiting.

MARIANAS ISLANDS.—Guam: Umatac, *Fosberg* 35656 (US).

Ipomoea indica (Burman) Merrill

Ipomoea indica (Burman) Merrill, Int. Rumph. Herb. Amb., 445, 1917.—Kanehira, Enum. Micr. Pl., 399, 1935.—Okabe, Jour. Anthrop. Soc. Nippon, 56:425, 1941; Nankyo, 2:22, 1943.—Stone, Micronesica, 6:492, 1971.—Fosberg, Falanruw, and Sachet, Smithsonian Contr. Bot., 22:37, 1975.—Fosberg, Bot. Notiser, 129:35, 1976.—Hosokawa, ms., n.d.

Convolvulus indicus Burman, Ind. Univ. Herb. Amb., 7:6, 1755.

Ipomoea congesta R. Brown, Prodr., 485, 1810.—Safford, Contr. U.S. Nat. Herb., 9:298, 1905.—Merrill, Phil. Jour. Sci. Bot., 9:131, 1914.—Okabe, Jour. Anthrop. Soc. Nippon, 56:425, 1941.

Convolvulus congestus (R. Brown) Sprengel, Syst. Veg., 1:601, 1825.

Pharbitis insularis Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:438, 1833.—Safford, Contr. U.S. Nat. Herb., 9:350, 1905.

Ipomoea insularis (Choisy) Steudel, Nom. Bot., ed. 2, 1:817, 1840.

Convolvulus hederaceus sensu Safford, Contr. U.S. Nat. Herb., 9:247, 349, 1905 [non L., Sp. Pl., 154, 1753].

Convolvulus coeruleus sensu Safford, Contr. U.S. Nat. Herb., 9:247, 1905 [non (Roxburgh) Sprengel, Syst. Veg., 1:593, 1825].

Ipomoea hederacea sensu Safford, Contr. U.S. Nat. Herb., 9:349, 1905.—Merrill, Phil. Jour. Sci. Bot., 9:132, 1914.—

Kanehira, Enum. Micr. Pl., 399, 1935.—Stone, Micronesica, 6:492, 1971. [Non (L.) Jacquin, Collect. Am., 1:124, 1786.]
Convolvulus nil sensu Safford, Contr. U.S. Nat. Herb., 9:248, 350, 1905 [non L., Sp. Pl., ed. 2, 219, 1762].
Pharbitis hederacea sensu Safford, Contr. U.S. Nat. Herb., 9:349, 1905 [non (L.) Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:440, 1833].
Pharbitis nil sensu Safford, Contr. U.S. Nat. Herb., 9:350, 1905 [non (L.) Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:439, 1833].
Pharbitis congesta (R. Brown) Hara, Enum. Sperm. Jap., 1:166, 1948 [combination probably first made in synonymy by Wight in Safford, 1905:349, but first validly published by Hara].

Twiner with appressed-pilose stems and leaves, leaf blades strongly cordate, acuminate, entire to somewhat trilobate; peduncles exceeding leaves, retrorse pilose, with a small dichasial cluster of subsessile to pedicellate flowers at summit, rarely many flowered; bracts linear to lanceolate; sepals lanceolate or ovate-lanceolate, caudate acuminate, to 2.5 cm long, glabrous or appressed pubescent; corolla narrowly campanulate, flaring, blue, fading pink, about 8 cm long; stamens unequal, less than half length of corolla; stigmas 2, globular; capsule depressed globose, about 1 cm wide; seed black, glabrous.

Ipomoea indica (Burman) Merrill var. *indica*

The widespread form, as described above, distinguished by being notably appressed pilose on most parts.

Pantropical, widespread in the Pacific Islands, in Micronesia known from the Marianas—Agrigan, Alamagan, Guguan, Sarigan, Saipan, Tinian, Agiguan, Rota, Guam; Carolines—Palau, Satawal, Truk, Kusaie. Common at low elevations back of the beach, especially in open and disturbed places, climbing on bushes and in thickets, forming dense mats on bare limestone soil even at fair elevations.

USES.—“The seeds are strongly purgative” (Guam: Safford, 1905, under *Pharbitis hederacea*). “The root is a powerful cathartic” (Guam: Safford, 1905, under *Ipomoea congesta*). The leaf is chewed with betel (“pupulo”), the plant is used as a forage for animals, the leaf is used externally for bruises, the leaf is used in a medicinal beverage for “bloody flux” (“amot manuda hagua”); some informants say the plant is not used in Guam (Guam: Whiting, ms., 1965). Leaves are fed to young pigs; young

tips are mashed and applied to bruises (Guam: Fosberg 25347). It is used against sore throat (Marianas: von Prowazek, 1913; “fopgo,” probably this species).

VERNACULAR NAMES.—

fofgo (Saipan: Hosaka 3003)
 fofgo (Rota: Fosberg 24943)
 abubu (Guam: Nelson 167)
 fofga (Guam: Fosberg 35531)
 fofgo (Guam: Fosberg 25347; Whiting C28; Nelson 33)
 fofgu (Guam: Safford, 1905)
 oleamad (Palau: Fosberg 32057)
 ori-yemad (Palau: Okabe, 1941)
 oriemad (Palau: Okabe, 1943)
 afanafan (Truk, Moen I.: Anderson 758)
 ferukeruk (Truk, Moen I.: Anderson 758)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Choisy, 1833:438; *Gaudichaud* 32 or 20 (G).

Agrigan: Hosokawa, n.d.

Alamagan: Asongsong village, 3–15 m, Fosberg 31731 (US, BISH, Fo).

Guguan: 175 ft [55 m], Falanruw 1884? (US).

Sarigan: Hosokawa, n.d.

Saipan: Kanehira 953 (NY, FU), 1000 (FU); Momose in 1930 (TI); Stephens 5 (Fo); Army Hill, Courage 9 (US); Charan-Tarhoho, 200 ft [60 m], Hosaka 3003 (US, BISH, Fo).

Tinian: Masalog Ridge, 350 ft [105 m], Hosaka 2830 (US, BISH, Fo).

Agiguan: Kondo in 1952 (BISH).

Rota: Middle level plateau above Tataacho Pt., 150–250 m, Evans 2057 (US, HAW, Fo, MO); Sabana, 900 ft [275 m], Hosaka 3032 (US, BISH, Fo); airstrip, N of Shimaru, 180 m, Fosberg 24943 (US, BISH, Fo, NY, L); Sonson, 1–10 m, Fosberg 25078 (US, BISH); road to Haofna, S side of island, 200–250 m, Sachet 1748 (US, BISH, Fo, NY, L).

Guam: McGregor 501 (US, BISH, BM); Marche 51 (P, Fo), 232 (P, Fo); G.E.S. 717 (BISH); Merrill, 1914:131–152; Manilao, Whiting C28 (Fo); Yigo, Liming s.n. (US), Nelson 33 (NY, BISH); Yigo, 120 m, Fosberg 35531 (US, BISH, Fo, NY, L); Talofofu, Mt. Almagosa, 600 ft [180 m], Hosaka 3180 (US, BISH, Fo); Talofofu village, 105 m, Necker 211 (US); 1 mi [1.6 km] S of Barrigada, Glassman 304 (Fo); 1 km S of Barrigada, 65 m, Fosberg 35280 (US, BISH, Fo, NY, L); Barrigada Hill, 150 m, Stone 4495 (GUAM); Asan Point, 2 m, Anderson 34

(US, BISH); just S of Ylig Bay, E coast of island, 50–65 m, *Fosberg* 25347 (US, BISH, Fo, NY); Northwest Field, 185 m, *Fosberg* 35387 (US, BISH), 35388 (US); 2 mi [3.2 km] W of Agat, *Moore* 276 (US); Haputo Pt., *Necker* 21 (US); Manchano Dist., 150 m, *Bryan* 1180 (BISH); Piti, *Swezey* in 1936 (BISH), *Nelson* 167 (NY, BISH); Mt. Santa Rosa, 240 m, *Evans* 1755 (US).

CAROLINE ISLANDS.—Palau: s.l., *Nisida* 46 (FU); *Richardson* 72 (US). Madmosuk Islet (W of Koror): 50 ft [15 m], *Stone* 1302 (BISH). Koror: Ngerabe'ed, 5–10 m, *Fosberg* 32057 (US, BISH, Fo, NY, L). Ngarakabesang: old seaplane landing, *Hardy* 65 (US).

Satawal: 2 m, *Fosberg* & *Evans* 46917 (US, HAW, Fo).

Truk: Moen: slope E of village, 35 m, *Anderson* 758 (US, BISH, Fo, NY, L).

Kusaie: Tomasakku, *Takamatsu* 570 (BISH).

Ipomoea indica f. *albiflora* Stone

Ipomoea indica f. *albiflora* Stone, *Micronesica*, 2(2):139, 1967; 6:493, 1971.

A white-flowered form, sepals somewhat ciliate.

MARIANAS ISLANDS.—Guam: Harmon Village *Stone* 4729 (GUAM, type). Also known from the Ryukyu Islands.

Ipomoea indica var. *hosakae* Fosberg

Ipomoea indica var. *hosakae* Fosberg, *Micronesica*, 2(2):151, 1967.

A population with glabrous strongly hastate-trilobate leaves.

CAROLINE ISLANDS.—Truk: Moen: Mt. Takeum, 700 ft [215 m], *Hosaka* 2713 (US, type; BISH, Fo, NY). Fefan: Mt. Tuktyap, *Hosokawa* 8387 (A).

Ipomoea littoralis Blume

Ipomoea littoralis Blume, *Bijdr.*, 713, 1825 [1826].—Volkens, *Bot. Jahrb.*, 31:473, 1901.—Safford, *Contr. U.S. Nat. Herb.*, 9:299, 1905.—Krämer in Thilenius, *Erg. Süds. Exp.*, IIB, 10(1):389, 1937.—Glassman, *Bishop Mus. Bull.*, 209:100, 1952.—Fosberg, *Atoll Res. Bull.*, 39:17, 1955.—Fosberg and Sachet, *Atoll Res. Bull.*, 92:32, 1962.—Stone, *Micronesica*, 1:126, 1964.—Fosberg, *Micronesica*, 2(2):151, 1967.—Otobed, ms., 1967; *Guide List Plants Palau Is.*, 1971.—Stone, *Micronesica*, 6:493, 1971.—Alkire, *Micronesica*, 10:24, 1974.

Convolvulus denticulatus Desrousseaux in Lamarck, *Encycl. Méth.*, 3:540, 1789 [1792].—Gaudichaud, *Bot. Voy. Uranie*, 70, 1826.

Ipomoea denticulata (Desrousseaux) Choisy, *Mém. Soc. Phys. Hist. Nat. Genève*, 6:467, 1833.—Engler, *Notizbl.*, 1:225, 1897.—Schumann & Lauterbach, *Fl. Süds.*, 516, 1901.—Safford, *Contr. U.S. Nat. Herb.*, 9:298, 1905.—Okabe, *Jour. Anthropol. Soc. Nippon*, 56:425, 1941. [Non R. Brown, *Prodr.*, 485, 1810.]

Ipomoea choisiana Wight ex Safford, *Contr. U.S. Nat. Herb.*, 9:298, 1905.—House, *Torreya*, 7:37, 1907.—Merrill, *Phil. Jour. Sci. Bot.*, 9:131, 1914 [as *I. choisyana*]. [Non Wight and Arnott ex Hallier f., *Bot. Jahrb.*, 18:130, 1894.]

Ipomoea gracilis sensu Merrill, *Phil. Jour. Sci. Bot.*, 9:131, 1914.—Kanchira, *Enum. Micr. Pl.*, 399, 1935.—Hosokawa, *Bull. Biogeogr. Soc. Japan*, 7:199, 1937.—Okabe, *Nankyo*, 2:23, 1943.—St. John, *Pac. Sci.*, 5:285, 1951.—Glassman, *Bishop Mus. Bull.*, 209:100, 1952.—Stone, *Pac. Sci.*, 13:103, 1959.—Hosokawa, ms., n.d. [Non R. Brown, *Prodr.*, 484, 1810.]

Slender glabrous twiner, leaves broadly cordate, usually less than 5 cm across, sometimes trilobed, venation netlike, conspicuous; peduncles short, 1–several-flowered, bracts minute, caducous; sepals unequal in width, outer ones oblong-elliptic, inner as broad as long, broadest at summit, slightly mucronate; corolla funnelform to campanulate, bright rose purple, darker in throat, 4.5 cm or less long; stamens and style included, stigmas 2, globose; capsule glabrous, globose, about 9 mm in diameter; seeds black, glabrous.

Pantropical, on most islands of the Pacific, in Micronesia known from the Marianas: Anatahan, Saipan, Tinian, Rota, Guam; from the Carolines: Palau, Sonsorol, Yap, Ulithi, Fais, Woleai, Ifaluk, Lamotrek, Satawal, Namonuito, Murilo, Nomwin, Truk, Namoluk, Lukunor, Satawan, Kapingamarangi, Ponape, Kusaie; from the Marshalls: Ujelang, Lae, Ailinglapalap, Majuro, Arno, Jaluit; from the Gilberts: Butaritari. Common in lowlands, especially in disturbed or open places and along sea-coasts, less common at middle elevations. In Caroline atolls found on edges of taro pits, around villages, and generally in interior in openings and thin places in woods and coconut groves. Probably impossible to determine where this plant was native and where accidentally introduced by man.

USES.—The leaves are used in relieving pains after childbirth and as an ingredient in soups, and the flowers are employed as a hemostatic in menstruation (Ponape: Glassman, 1952.) This vine is used for both people and animals (pigs) as a remedy

for loss of appetite. It is boiled to make a medicinal tea for human consumption. The leaves of this vine are also pounded, mixed with coconut oil, and applied to boils to relieve pain (Sonsorol: *Berry 3*). Leaves are eaten after being cooked in water but only when typhoons have made other food scarce (Ifaluk: *Abbott & Bates 61, 80*). Leaves are eaten mixed with sweet toddy as a starvation food; also they are pounded and placed in coconut water, and the mixture drunk for fright illness (Woleai: *Alkire 23*).

VERNACULAR NAMES.—

lagoun (Guam: *Gaudichaud, 1826*)
 lagun (Guam: *G.E.S. 96, 254; Nelson 31*)
 lagun tase (Guam: *McGregor 449*)
 tohruh (Palau: *Okabe, 1943*)
 torch (Palau: *Otobed, 1967, 1971*)
 toro (Palau: *Fosberg 25775*)
 toroog (Palau: *Hosokawa, n.d.*)
 sauworu (Sonsorol: *Berry 3, 7*)
 dili (Yap: *Fosberg 46559*)
 geli (Yap: *Wong 330*)
 gelie (Yap: *Volkens, 1901*)
 gilij (Yap: *Fosberg 25549*)
 chawel (Ulithi: *Lessa 55; Hosaka 3218*)
 cho'wel (Ulithi: *Fosberg 46615*)
 djáuel (Fais: *Krämer, 1937*)
 chaiwel (Woleai: *Evans 482; Alkire, 1974*)
 ririo (Woleai: *Alkire, 1974*)
 shaiwel (Woleai: *Alkire 23*)
 chaiwol (Ifaluk: *Fosberg 47236*)
 schaiuwel (Ifaluk: *Abbott & Bates 80*)
 shaiuwel (Ifaluk: *Abbott & Bates 61, 80*)
 zharuwel (Ifaluk: *Abbott & Bates 61*)
 raiwal (Satawal: *Fosberg & Evans 46919*)
 ferukeruk (Truk: *Anderson 739*)
 frugrug (Truk: *Hosokawa, 1937*)
 maranof (Truk: *Hosaka 2745*)
 ruge (Truk: *Fosberg 24636*)
 ruk (Truk: *Fosberg 26041*)
 rukaruk (Truk: *Fosberg 26041*)
 ruke (Truk: *Fosberg 24636*)
 ruuke (Truk: *Wong 163*)
 rorurok (Satawan: *Anderson 970*)
 wan ut (Satawan: *Anderson 1209*)
 chehuwe (Kapingamarangi: *Hosaka 3433*)
 huwhe (Kapingamarangi: *Niering 562, 633, 669, 687*)
 emp (Ponape: *Fosberg 26247*)
 omp (Ponape: *Fosberg 26247, 26239; Reisenberg 53*)
 oomp (Ponape: *Glassman 2748*)
 sul oomp (Ponape: *Glassman, 1952*)
 unpu (Ponape: *Hosokawa, n.d.*)
 ooh (Kusaie: *Glassman 2673*)
 bele (Ujelang: *Fosberg 34202*)
 bele (Lae: *Fosberg 34053*)
 lawjuningen kujikerit (Ailinglapalap: *Fosberg 26887*)

marginejojo (Majuro: *St. John 21411*)

marlab (Majuro: *Fosberg 26981*)

walikök (Arno: *Anderson 3625*)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—*Gaudichaud 169* (or *18bis*) (G). The specimen is scarcely determinable with certainty but seems to belong here rather than in "*I. triloba?* var.," where *Gaudichaud* put it.

Anatahan: Near W coast, below 200 m, *Falanruw 1708* (US).

Saipan: *Marche 18* (P, Fo); *Momose* in 1930 (TI); *Tuyama* in 1937 (TI); *Kanehira & Hatusima 4315* (FU); Lake Susupe, 1 km SE of Susupe Point, just E of Charankanoa, 0 m, *Fosberg 25269* (US, BISH).

Guam: *Gaudichaud, 1826:70*; *Merrill 1914:131*; *Safford, 1905:298*; *Marche 181* (P, Fo); *Nelson 31* (BISH), *32* (BISH), *399* (BISH); *McGregor 449* (BISH); *G.E.S. 96* (US, BISH, BM, NSW), *254* (US); *Anderson 342* (US); W of Mt. Santa Rosa, *Anderson 161* (US, BISH, Fo); W foot of Mt. Santa Rosa, *Moore 380* (US); Mt. Tenjo, 800 ft [245 m], *Moore 83* (US); Cotal Conservation Area, Cross Island Road, 150 m, *Fosberg 39245* (US, BISH, Fo, NY, L); S to SE of Umatac, 80–200 m, *Fosberg 35440* (US); plateau NW of Talofoto, 400 ft [120 m], *Hosaka 3130* (US); ½ mi [0.8 km] NE of Mt. Tenjo, 1000 ft [305 m], *Moore 294* (BISH); Machanao Distr., 150 m, *Bryan 1180a* (BISH); Manengon dry savannas, *Stone 4837* (GUAM); Manengon, volcanic hills near "Tarzan River" falls, *Stone 4532* (GUAM); Piti, *Swezey* in 1936 (BISH).

CAROLINE ISLANDS.—Palau: *Kayangl: Tuyama* in 1939 (TI). Babeldaob: *Kamusetu, Almonogui, Hatusima 4990* (FU); *Marikyoku, Kanehira 422* (FU); *Melekiok, Tuyama* in 1939 (TI); *Arekalong, Takamatsu 1655* (BISH); *Ngarsul, Tuyama* in 1937 (TI); *Aimiriik, Kanehira & Okuya* in 1934 (FU). Ngeanges: in Yoo (Sar) Passage, *Fosberg 25775* (US, BISH, Fo, NY, L).

Sonsorol: *Hardy 131* (US); *Berry 7* (US), *3* (US).

Yap: *Kanehira & Hatusima 4328* (FU); *Kamiya 199* (TI); 25 ft [8 m], *Wong 330* (US, BISH, Fo); near Ngalog village, E central Yap, *Cushing 495* (US); low E ridge of Mt. Matade, 20–40 m, *Fosberg 25574* (US); Mt. Matade, 160 m, *Fosberg 25549* (US), 150 m, *Cushing 454* (US); Dogol, *Tuyama* in 1939 (TI); Tarang I., Tomil Bay, *Tuyama* in 1939

(TI); Numagil, S Yap, 5 m, *Cushing* 666A (US); N Gagil, near Tagaren Channel, 3 m, *Cushing* 602 (US); Tomil I., 50 ft [15 m], *Hosaka* 3267 (US); Dalipebinaw Distr., near Yap High School, 30 m, *Fosberg* 46559 (US, HAW, Fo); Colonia, Beacon Hill, 170 m, *Evans* 298 (US, BISH).

Ulithi: Fassarai I., *Hosaka* 3218 (US); Mogmog I., *Lessa* 55 (BISH); Falalap I., 1–3 m, *Fosberg* 46615 (Fo).

Fais: On plateau, 15 m, *Fosberg* 46692 (US).

Woleai: Utagal I., 1–2 m, *Wong* 27 (US, BISH, Fo, NY, L); Falalis I., interior of islet, *Alkire* 23 (US); Sholiap (Saliap) I., 1–2 m, *Fosberg* 47035 (US); Falalap I., *Evans* 482 (US, Fo).

Ifaluk: Falarik I.: *Abbott & Bates* 61 (US, BISH); on Fanniwa trail, *Abbott & Bates* 80 (US, BISH). Falalap I.: 1–2 m, *Fosberg* 47244 (US, HAW). Ifaluk I.: 1–2 m, *Fosberg* 47236 (US).

Lamotrek: Lamotrek I., 1 m, *Fosberg & Evans* 46773 (US).

Satawal: Interior breadfruit and coconut forest, 2 m, *Fosberg & Evans* 46919 (US).

Namounito: Magur I., *Stone* 2120 (BISH); Piseras I., 3–5 m, *Evans* 887 (US); Ono I., 0–3 m, *Evans* 1035 (US).

Murilo: Ruo I., 0–3 m, *Evans* 1163 (US); Murilo I., 3–5 m, *Evans* 1246 (US).

Nomwin: Nomwin I., 0–3 m, *Evans* 1046 (US); Fananu I., 0–5 m, *Evans* 1100 (US).

Truk: *Koidzumi* in 1915 (TI); *Wong* 163 (US, BISH, Fo); Uoala, *Moore* 136 (US). Moen I.: S of Moen village, *Anderson* 739 (US); flats near "Baker Dock," 3 m, *Fosberg* 24692 (US, BISH, Fo, NY, L); N Side of Nomenuk Bay, *Fosberg* 26041 (US, BISH); Nob Hill, 100–150 m, *Evans* 1375 (US, HAW). Dublon and most islets: *Hosokawa*, 1937: 199. Dublon: Natsushima, *Takamatsu* 103 (BISH). Tol: Suiyoto, *Takamatsu* 30 (BISH). Fefan: 25 ft [8 m], *Hosaka* 2745 (US, BISH, Fo, NY, L). Pis: *Fosberg* 24636 (US, BISH).

Namoluk: Namoluk I., 0.9 m, *Marshall* 81 (US).

Lukunor: Lukunor I., *Anderson* 2157 (US, BISH, Fo, NY, L); Oneap I., *Anderson* 1083 (US, BISH, Fo, NY, L).

Satawan: Moch I., *Anderson* 970 (US, BISH, Fo, NY, L); Ta I., *Anderson* 1037 (US, BISH, Fo, NY, L); Kutu I., *Anderson* 1209 (US, BISH, Fo, NY, L).

Kapingamarangi: Hare I.: *Hosaka* 3433 (US, BISH, Fo); *Niering* 562 (US); 1 m, *Fosberg* 26089

(US, BISH); Werua I.: *Niering* 669 (US, Fo); 687 (US), 633 (US).

Ponape: *Riesenberg* 53 (BISH); *Kusano* in 1915 (TI); Colonia, Not District, *Fosberg* 26247 (US, BISH, Fo, NY, L), *Fosberg* 26239 (US, BISH, Fo); vicinity of Colonia, *Glassman* 2447 (US, BISH); U District, *Glassman* 2573 (US, BISH); Mt. Seletereh, 2000 ft [610 m], *Glassman* 2748 (US); Ronkiti, *Glassman* 2797 (US, BISH); Mt. Tolotom, *Takamatsu* 1052 (BISH, BM).

Kusaie: Mt. Tefeyaht, 100 ft [30 m], *Glassman* 2673 (US); Lele, *Hosakawa* 6457 (A); Mt. Buache, *Hosakawa* 6256 (A), 6292? (A); summit of Mt. Matanta (Buache), 550–600 m, *Fosberg* 26634 (US); S of Lela (Lele) Harbor 50–150 m, *Fosberg* 26655 (US, BISH, Fo).

MARSHALL ISLANDS.—Ujelang: Ujelang I., *Fosberg* 34202 (US).

Lae: Loj I., *Fosberg* 34053 (US).

Ailinglapalap: Airik I., *Fosberg* 26887 (US).

Majuro: Majuro I., *St. John* 21411 (BISH); Laura (W end of island), *Fosberg* 26981 (US).

Arno: Ine I., *Hatheway* 879 (US, BISH), *Anderson* 3625 (US, BISH).

Jaluit: *Schumann and Lauterbach*, 1901:516 (citing *Schwabe*); *Engler*, 1897:225; *Schnee* in 1902 (NSW); *Schnee* 8 (NSW); Imruj (Imrodj) I., 1–3 m, said to be introduced from Ponape, *Fosberg* 26765 (US, BISH, Fo, NY, L).

GILBERT ISLANDS.—Butaritari: Butaritari I., Butaritari village, *Herbst & Allerton* 2766 (US).

Ipomoea macrantha Roemer & Schultes

Ipomoea macrantha Roemer & Schultes, Syst. Veg., 4:251, 1819.

Ipomoea longiflora R. Brown, Prodr., 485, 1810 [non *Humboldt & Bonpland* ex Willdenow, Enum. Hort. Berol., 207, 1809].

Convolvulus tuba Schlechtendal, Linnaea, 6:735, 1831.

Ipomoea glaberrima Bojer ex Bouton, Hook. Jour. Bot., 1:357, 1834.—*Volgens*, Bot. Jahrb., 31:473, 1901.

Calonyction comospermum Bojer, Hort. Maur., 228, 1837 [nom. illegit., equivalent to *Ipomoea glaberrima* Bojer ex Bouton, 1834].

Ipomoea tuba (Schlechtendal) G. Don, Gen. Syst., 4:271, 1838.

—*St. John*, Pac. Sci., 5:285, 1951.—*St. John & Mason*, Pac. Sci., 7:166, 1953.—*Luomala*, Bishop Mus. Bull., 213:47, 110, 1953.—*Fosberg*, Atoll Res. Bull., 39:18, 1955.—*Catala*, Atoll Res. Bull., 59:97, 1957.—*Fosberg*, Atoll Res. Bull., 67:4, 17, 1959; 68:6, 1959.—*Sachet*, Atoll Res. Bull., 76:6, 1961.—*Fosberg and Sachet*, Atoll Res. Bull., 92:32, 1962; 123:13,

- 1969.—Stone, *Micronesica*, 6:494, 1971.—Alkire, *Micronesica*, 10(1):3, 1974.
- Calonyction tuba* (Schlechtendal) Colla, *Mem. c. una nuova specie di Calonyction* . . . 15, 1841 [1840?].
- Calonyction speciosum* sensu Engler, *Notizbl.*, 1:225, 1897 [non Choisy, *Mém. Soc. Phys. Hist. Nat. Genève*, 6:441, 1833].
- Calonyction bona-nox* sensu Schumann & Lauterbach, *Fl. Süds.*, 515, 1901 [non (L.) Bojer, *Hort. Maur.*, 227, 1837].
- Calonyction album* sensu Merrill, *Phil. Jour. Sci. Bot.*, 9:131, 1914.—Hosokawa, ms., n.d. [Non (L.) House, *Bull. Torr. Bot. Club*, 31:591, 1904.]
- Ipomoea grandiflora* sensu Koidzumi, *Bot. Mag. Tokyo*, 29:253, 1915.—Kanehira, *Enum. Micr. Pl.*, 399, 1935.—Hosokawa, ms., n.d. [Non Lamarck, *Tabl. Encycl.*, 1:467, 1791 [1793?].]
- Ipomoea alba* sensu Taylor, *Pl. Bikini*, 193, 1950 [non L., *Sp. Pl.*, 161, 1753].
- Ipomoea bona-nox* sensu Guillaumin, *Bull. Soc. Bot. France*, 99:22, 1952 [non L., *Sp. Pl.*, ed. 2, 228, 1762].

Extensive coarse glabrous twining liana, lower parts thickened but not very woody, in very dry situations forming a short very thick trunk which annually produces herbaceous elongate stems which die back during the dry seasons; leaves somewhat fleshy or not, cordate orbicular, somewhat acuminate, to 15 cm across; peduncles 1–few-flowered, cymose, pedicels thickened, or even somewhat turbinate; sepals orbicular, apex rounded, 15–25 mm long, accrescent and very thick in fruit; corolla white, to 10 cm long, with very long tube and flaring limb, opening at night; stamens and style included, stigmas 2; capsules globose or subglobose, to 2.5 cm long, enclosed by accrescent sepals which later become reflexed; seeds with black tomentum, long hairs on edges.

Pantropical, on almost all Pacific Islands, known in Micronesia from the Marianas—Saipan, Tinian, Rota, Guam; Carolines—Palau, Sonsorol, Yap, Ulithi, Eauripik, Woleai, Faraulap, Ifaluk, Gaferut, Namonuito, Murilo, Truk, Lukunor, Satawan, Nukuoro, Kapingamarangi, Mokil, Pingelap; Wake I.; Marshalls—most of the islands; Gilberts—Tarawa, Nonouti, Tabiteuea, Onotoa. A strand species, found both in open and in forests, occasionally, as in Guam, reaching middle elevations, especially at tops of cliffs facing sea.

USES.—The marble-sized tubers were used long ago for food (Kili, Bikini people: St. John and Mason, 1953.) Stems and leaves are crushed in water and used as a shampoo. To kill lice, the shampoo is used in concentrated form (Gilberts, Tarawa:

Catala 57). The vine is regarded as harmful since it kills any tree on which it grows (Kili: St. John and Mason, 1953). Young leaves and roots are used in medicine; withes are used for skipping rope (Rota: *Evans* 2030). A preparation of young leaves, pounded and mixed with coconut oil, is applied to boils, toothaches, and bruises; rubbed into painful areas, it relieves throbbing and swelling (Sonsorol: *Berry* 61).

VERNACULAR NAMES.—

- alaihaitasi (Guam: *G.E.S.* 166)
- sauwonilaewau (Sonsorol: *Berry* 61)
- walfichfich (Ulithi: *Lessa* 59)
- gufamach (Woleai: Alkire, 1974)
- hufamash (Woleai: *Alkire* 86)
- ava'mas (Faraulap: *Fosberg & Evans* 47397)
- garenap (Ifaluk: *Abbott and Bates* 85)
- walima (Ifaluk: *Fosberg* 47204)
- afamach (Truk: *Fosberg* 24634)
- ööröpön (Truk: *Wong* 179)
- arupuel (Lukunor: *Anderson* 2110)
- afamas (Satawan: *Anderson* 1073)
- hue (Nukuoro: *Fosberg* 26235, *Carroll* 43)
- huwhe maitai (Kapingamarangi: *Niering* 554)
- tehuwe (Kapingamarangi: *Hosaka* 3438)
- tihu (Kapingamarangi: *Fosberg* 26079)
- tileiu (Kapingamarangi: *Niering* 704)
- ahfahmus (Ant: *Glassman*, 1953)
- ohlop (Mokil: *Glassman* 2606)
- wahlap (Pingelap: *Glassman* 2648)
- bele (Eniwetok: *Fosberg* 24349)
- maralap (Utrik: *Fosberg* 33700)
- bele (Ujelang: *Fosberg* 34178)
- marbele (Ujelang: *Fosberg* 34178)
- marbele (Lae: *Fosberg* 34083)
- marabele (Aur: *St. John* 21385)
- marabele (Majuro: *St. John*, 1951, observed)
- marbele (Arno: *Anderson* 3622, 3758)
- mar böle (Kili, Bikini people: *St. John and Mason*, 1953, citing *Mason* 14)
- te ruku (Tarawa: *Catala* 57)
- ruku (Nonouti: *Koch* 32)
- te ruku (Tabiteuea: *Luomala* 38)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Saipan: *Lange* 12 (BISH); *Momose* in 1930 (TI); Tsukimi Bay, 75 m, *Fosberg* 25206 (US, BISH, Fo, NY).

Tinian: "Yellow Beach" E of Mt. Lasso, 1–10 m, *Fosberg* 24905 (US, BISH).

Rota: *Necker R* 64 (US); between Rota village and Tataacho Pt., *Fosberg* 25008 (US); Songsong village, 5–10 m, *Evans* 2030 (US).

Guam: Merrill 1914:131; Fadian Pt., 115 m, *Fosberg* 31219 (US, BISH, Fo, NY); above Tarague Beach, 140 m, *Fosberg* 35672 (US, BISH); Oca Pt., *Anderson* 181 (US, BISH); S of Asan Pt. and Piti, 15 m, *Anderson* 95 (US); E coast, between Togcha and Talofof Bay, *Moore* 369 (US); E of Apra Heights, Manengon, *Stone* 4662 (BISH, GUAM); Atantano Road, *Nelson* 405 (NY), 566 (NY); Iates Pt. Conservation Area 60–90 m, *Evans* 1832 (US); Cabras I., *G.E.S.* 166 (US, BISH, BM, NY).

CAROLINE ISLANDS.—Palau: Koror: Momose in 1930 (TI). Ngeanges: in Yoo (Sar) Passage, just W of southern point of Urukthapel I., *Fosberg* 25811 (US, BISH, Fo, NY, L). Peliliu: N end of "Purple Beach," E side of island, *Fosberg* 26008 (US, BISH, Fo); strand, *Hatusima* 4723 (FU), 4807 (FU).

Sonsorol: *Berry* 61 (US, HAW); *Salsedo* 397 (HAW).

Yap: Volkens 1901:473 (citing Volkens 189); Garim I. (off SE Yap), *Cushing* 542 (US).

Ulithi: Mogmog, *Lessa* 59 (BISH); Asor I., 1–2 m, *Fosberg* 46455 (Fo); Sorlen I., 0–5 m, *Evans* 426 (Fo); Falalap I., 1–3 m, *Fosberg* 46632 (US, Fo, BISH).

Eauripik: Eauripik I., in village, 1–2 m, *Fosberg* & *Evans* 47150 (US, Fo).

Woleai: Falalis I., interior of islet, *Alkire* 86 (US); Sholiap I., 1 m, *Fosberg* 47044 (US), 2 m, *Fosberg* 47048 (US).

Faraulap: Faraulap I., 3 m, *Fosberg* & *Evans* 47397 (US).

Ifaluk: Falarik I., *Abbott* & *Bates* 85 (US, BISH), *Evans* 538 (Fo); Ifaluk I., 2 m, *Fosberg* 47204 (US, BISH, K, MO).

Gaferut: *Niering* 773 (US).

Namonuito: *Stone* 2118 (BISH); Piseras I., 0–3 m, *Evans* 898 (US, HAW, NY, A).

Murilo: Ruo I., 3–5 m, *Evans* 1208 (US).

Truk: *Wong* 179 (US, BISH). Moen (Harushima): *Takamatsu* 172 (BISH). Pis: *Fosberg* 24634 (US, BISH).

Lukunor: Oneap I., *Anderson* 2110 (US, BISH, Fo, NY, L).

Satawan: Ta I., *Anderson* 1073 (US, BISH, Fo, NY).

Nukuoro: Nukuoro (Matakena) I., *Fosberg* 26235 (US, BISH); Modubodai, *Carroll* 43 (US).

Kapingamarangi: Tangawaka I., *Niering* 704 (US); Hare I., *Hosaka* 3438 (US, BISH, Fo), *Fos-*

berg 26079 (US, BISH); Nunakita I., *Niering* 554 (US); Werua I., *Niering* 585 (US).

Ant: Glassman, 1953:305.

Mokil: Kalap I., *Glassman* 2606 (US).

Pingelap: Pingelap I., *Glassman* 2648 (US).

WAKE ISLAND.—*Fosberg* 33614 (US); *Johnson* (*Degener's*) 20694 (NY); *Branckamp* in 1936 (BISH); *Pollock* 37 (BISH); *Pollock* & *Bryan* 21 (BISH); *McFarlane* 10 (US); *Johnson* in 1935 (BISH); *Gaston* in 1953 (BISH); *Lyons* 25 (BISH); *Peale* I., *Krauss* in 1957 (BISH).

MARSHALL ISLANDS.—Taylor, 1950:193–194. Radak [Chain]: s.l., *Eschscholtz* (LE).

Pokak: Sibylla I., *Fosberg* 34526 (US).

Eniwetok: Eniwetok I.: *Fosberg* 24285 (US, BISH, Fo, NY, L). Igurin I.: *Fosberg* 24305 (US, BISH). Biihiri I.: *St. John* 23825 (BISH). Engebi I.: *Fosberg* 24406 (US, BISH, Fo, NY, L); *St. John* 23781 (BISH). Japtan I.: *Fosberg* 24342 (US, BISH, Fo, NY, L); *Taylor* 46–1290 (US). Aniwaanini I.: *St. John* 23720 (US, BISH). Jieroru I.: *Taylor* 46–1249 (US). Aomon I.: *Taylor*, 1950:194 (citing *Taylor* 46–1346); 1–3 m, *Fosberg* 24349 (US, BISH, Fo).

Bikini: Bikini I., *Taylor* 46–1094 (BM, G), 46–1147 (US), 46–1054 (US); Eniirikku I., *Taylor* 1950:194 (citing *Taylor* 46–1027); Chieerete I., *Taylor* 46–1164 (US); Enyu I., *Taylor* 46–1176 (US), 46–1006 (US).

Ailinginae: Sifo I., *Fosberg* 36693 (US, BISH, Fo).

Rongelap: Eniaetok I., *Taylor* 46–1366 (US, BISH).

Rongerik: Latoback I., *Taylor* 46–1423 (US).

Utirik: Utirik I.: *Fosberg* 33661 (US, NY), 33677 (US); *Stone* 1057 (BISH). Eluk I.: *Fosberg* 33700 (US, NY).

Ujelang: Ujelang I., *Fosberg* 34178 (US, NY); Daisu I., *Doty* & *Gilmartin* 12764 (BISH).

Ujae: Bock I., *Fosberg* 34362 (US, NY).

Wotho: Wotho I., *Fosberg* 34239 (US, NY).

Lae: Loj I., *Fosberg* 34056 (US); Enenbao I., *Fosberg* 34083 (US).

Kwajalein: Lojjairong I., *Fosberg* 34119 (US); Bigej (Bennett) I., *Fosberg* 26519 (US, BISH, Fo, NY, L); Kwajalein I., *Fosberg* 26472 (US, BISH, Fo, NY, L).

Ailuk: Ailuk I., *Fosberg* 33942 (US, NY).

Jemo: *Fosberg* 33890 (US).

Likiep: Aikini (Agony) I., *Fosberg* 27053 (US, BISH).

Mejit: *Stone* 1081 (BISH).

Aur: Tabal I., *St. John* 21385 (BISH).

Ailinglapalap: Bikajle (Bigatyelang) I., *Fosberg* 26795 (US).

Majuro: Laura (W end of Majuro I.), *Fosberg* 26967 (US, BISH); Uliga I., *Stone* 961 (BISH).

Arno: Ine I., *Anderson* 3622 (US, BISH, NY); Eniirik I., *Anderson* 3758 (US, BISH, Fo, NY); Bikarej I., *Hatheway* 821 (US, BISH).

Kili: St. John and Mason, 1953:166, *Mason* 14 (BISH).

Jaluit: *Koidzumi* in 1915 (TI); Engler 1897:225; Schumann and Lauterbach, 1901:515 (citing Schwabe); Jaluit I., Sydney Pier, just S of Jabor, *Fosberg* 26685 (US, BISH, Fo, NY, L).

GILBERT ISLANDS.—Tarawa: Tearinibai, *Catala* 57 (P); Bikenibeu I., *Herbst & Allerton* 2690 (US).

Nonouti: S of Taunrawa, 2 m, *Koch* 32 (US, Fo).

Tabiteuea: Luomala, 1953:47, 110; *Luomala* 38 (BISH).

Onotoa: Moul 8338 (US), 8197 (US, BISH, NY).

Ipomoea mauritiana Jacquin

Ipomoea mauritiana Jacquin, Coll., 4:216, 1790.

Convolvulus paniculatus L., Sp. Pl., 156, 1753.

Ipomoea paniculata (L.) R. Brown, Prodr., 486, 1810.—Volken, Bot. Jahrb., 31:473, 1901. [Non Burman f., Fl. Ind., 50, 1768.]

Ipomoea digitata sensu Hosokawa, Bull. Biogeogr. Soc. Jap., 7:199, 1937.—Glassman, Bishop Mus. Bull., 209:99, 1952. [Non L., Syst. Nat., ed. 10, 924, 1759.]

Subglabrous liana; leaves large, cordate, usually deeply cut into 7 ovate- or oblong-lanceolate acuminate lobes; peduncles about as long as leaves, umbelloidly branched near summit into 1–4 pedicels, or corymbiform cymose-paniculate; sepals glabrous, orbicular, about 1 cm long, strongly concave; corolla campanulate, pink-purple, red or red-purple within in throat, about 6 cm long; stamens and style included, stigmas 2, globose; capsule globose, about 1 cm long; seeds black, covered with long coarse white hairs.

Said to be pantropic; in Micronesia: Caroline Is.—Palau, Yap, Truk, Ponape, Kusaie. Growing in thickets and edges of forest, climbing on rocks and on other plants.

USES.—Leaves of this species are used in relieving pains after childbirth (Ponape: *Glassman* 2564).

VERNACULAR NAMES.—

dodai (Yap: *Fosberg* 25553)

afanafan (Truk: *Anderson* 759)

emechimech (Truk: *Pelzer* 44)

eteniten (Truk: *Wong* 124)

mechimech (Truk: *Pelzer* 65)

metmet (Truk: Hosokawa, 1937)

likaam (Ponape: *Fosberg* 26352)

likam (Ponape: *Glassman* 2564, *Riesenberg* 67, Christian, 1899)

likatou (Ponape: *Riesenberg* 67)

asingsing (Kusaie: *Fosberg* 26571)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

CAROLINE ISLANDS.—Palau: Babeldaob: Melekiok, *Tuyama* in 1939 (TI). Peliliu: *Kanehira & Hatu-sima* 4792 (FU).

Yap: Volken 1901:473 (citing Volken 209, 463); Dogol, *Tuyama* in 1939 (TI); Mt. Matade, 160 m, *Fosberg* 25553 (US), 150 m, *Cushing* 456 (US); Colonia vicinity, 150 m, *Evans* 296 (US, HAW).

Truk: *Koidzumi* in 1915 (TI); *Koidzumi* in 1925 (TI); 25 ft [8 m], *Wong* 124 (US, BISH, Fo); *Kanehira* 606 (NY, FU). Moen: *Pelzer* 65 (US); old site of Mechetiu (Metitiu) village, W side of Bou Bay, 0–1 m, *Fosberg* 24418 (US, BISH); 1000 ft [305 m], *Hosaka* 2781 (US, BISH); summit of Mt. Tonaachau, *Fosberg* 26054 (US, BISH, Fo, NY); slope E of Moen (village), 30 m, *Anderson* 759 (US, BISH, Fo, NY, L); track from Nob Hill to high school, 100–120 m, *Evans* 1417 (US). Dublon: Hosokawa, 1937:199. Tol: *Pelzer* 44 (US); *Takamatsu* 29 (BISH). Fefan, Uman, Tarik: Hosokawa, 1937:199.

Ponape: *Riesenberg* 67 (BISH); *Glassman* 2564 (US, BISH); Jokaj, 300 ft [90 m], *Hosaka* 3496 (US, BISH, Fo, NY, L); Colonia, *Stone* 1974 (GUAM), *Kanehira* 688 (FU, NY); U District, N coast, between Ipuac and U, 1–5 m, *Fosberg* 26352 (US, BISH, Fo, NY); Nanpil, *Takamatsu* 840 (BISH); Salapwuk (Salbuk), *Takamatsu* 612 (BISH); Net village, *Salomon & George* 50 (US).

Kusaie: S side of Mt. Matanta (Buache), 50 m, *Fosberg* 26571 (US, BISH, Fo, NY, L); Moto, *Kanehira* 1426 (FU, NY).

Ipomoea obscura (L.) Ker-Gawler

Ipomoea obscura (L.) Ker-Gawler, Bot. Reg., 3:239, 1817.

Convolvulus obscurus L., Sp. Pl., ed. 2, 220, 1762.

Slender twiner, almost glabrous to notably pilose; leaves broadly cordate, acuminate, up to 5 cm in diameter, with broad rounded basal sinus, margins

subentire to finely crenulate, more or less ciliate, petioles slender, 2–6.5 cm long; flowers 1–several in pedunculate cymes, in each cyme 1 flower open at a time, peduncles 2–5 (or even 10) cm long, pedicels 1–1.5 cm, somewhat dilated upward; sepals 4–6 mm long, elliptic or elliptic ovate to oval or, in fruit, orbicular, the inner broader, mucronate; corolla campanulate-funnelform, flaring, 1.5–2 cm long, 1.5–2.5 cm broad, white or cream to sulfur-yellow, with dark purple center; stamens and pistil included; capsule subglobose, to 1 cm long, beaked, exserted from calyx, firm; seed 2.5×3.5 mm, plump, dark brown, sericeous tomentose.

A pantropical species probably of Old World origin and more common there, recently adventive in Guam.

MARIANAS ISLANDS.—Guam: Apra Harbor, area N of base of Orote Peninsula, entrance to Naval Station, May 27, 1973, 10 m, *Sachet 1714* (US, HAW).

Ipomoea pes-caprae (L.) R. Brown

Ipomoea pes-caprae (L.) R. Brown in Tuckey, Narr. Exped. Zaire, 477, March 1818.

Convolvulus pes-caprae L., Sp. Pl., 159, 1753.

The nominate subspecies of this pantropical strand species occurs mostly in the Indian Ocean area, but not in Micronesia.

Ipomoea pes-caprae ssp. *brasiliensis* (L.)
van Ooststroom

Ipomoea pes-caprae ssp. *brasiliensis* (L.) van Ooststroom, Blumea, 3:533, 1940.—Fosberg, Atoll Res. Bull., 67:17, 1959.—Fosberg and Sachet, Atoll Res. Bull., 92:32, 1962; 123:13, 1969.—Stone, Micronesica, 6:493, 1971.—Alkire, Micronesica, 10:2, 1974.—Fosberg, Falanruw, and Sachet, Smithsonian Contr. Bot., 22:37, 1975.

Convolvulus brasiliensis L., Sp. Pl., 159, 1753.

Convolvulus maritimus Desrousseaux in Lamarck, Encycl. Méth., 3:550, 1789 [1792].—Safford, Contr. U.S. Nat. Herb., 9:248, 1905.

Ipomoea maritima (Desrousseaux) R. Brown, Prodr., 486, 1810.—Endlicher, Ann. Wien. Mus. Naturgesch., 1:173, 1835.—Safford, Contr. U.S. Nat. Herb., 9:299, 1905.

Ipomoea brasiliensis (L.) Sweet, Hort. Sub. London, 35, Jul 1818.—G.F.W. Meyer, Prim. Fl. Esseq., 97, Nov 1818.—St. John, Bot. Jahrb., 89:575, 578, 1970.

Ipomoea pes-caprae sensu Engler, Notizbl., 1:225, 1897.—Christian, Caroline Is., 340, 1899.—Schumann & Lauterbach, Fl. deutsche Schutzg. Süds., 517, 1901.—Safford, Contr. U.S. Nat. Herb., 9:299, 1905.—von Prowazek, Deutsch. Marianen, 106, 109, 119, 1913.—Merrill, Phil.

Jour. Sci. Bot., 9:132, 1914.—Koidzumi, Bot. Mag. Tokyo, 29:253, 1915.—Okabe, Nankyo, 2:21, 1943.—St. John, Pac. Sci., 5:285, 1951.—Glassman, Bishop Mus. Bull., 209:100, 1952.—Luomala, Bishop Mus. Bull., 213:25, 48, 110, 1953.—Fosberg, Atoll Res. Bull., 39:18, 1955.—Catala, Atoll Res. Bull., 59:97, 1957.—Stone, Pac. Sci., 13:103, 1959.—Otobed, ms., 1967; Guide List Plants Palau Is., 1971.—Hosokawa, ms., n.d. [Non (L.) R. Brown in Tuckey, Narr. Exped. Zaire, 477, Mar 1818.]

Ipomoea biloba sensu Safford, Contr. U.S. Nat. Herb., 9:298, 1905.—Okabe, Nettarei Sangyô Kenkyû-sho ihô, 5:12, 1940; Jour. Anthrop. Soc. Nippon, 56:425, 1941. [Prob. non Forskâl, Fl. Aeg.-Arab., 44, 1775.]

Ipomoea purga sensu Okabe, Nettarei Sangyô Kenkyû-sho ihô, 5:12, 1940 [non Hayne, Arzneigew., 12:tt. 33, 34, 1833].

A prostrate, coarse, glabrous creeper, capable of forming dense mats; leaves coriaceous, oblong or oval to ovate, rounded or somewhat cordate at base, normally bilobed or at least prominently emarginate at apex; peduncles erect, stout, with 1–several pedicellate flowers in a cyme; sepals elliptic to orbicular, the outer ones narrower, obtuse, mucronulate, glabrous, up to about 1 cm long; corolla funnelform to campanulate, rose purple, darker in center, 3–5 cm long; stamens and style included; stigmas 2, globose; capsule globose, 12–15 mm high; seeds densely brown-tomentose, dull yellowish when the tomentum is worn off.

All Micronesian records and specimens of *Ipomoea pes-caprae* belong to this subspecies. St. John (1970) regards it as a distinct species, but the characters seem rather slight, principally differences in leaf shape and flower-size. Plants from the Ryukyus, Malaya, and Thailand seem rather intermediate. The taxon is here regarded as a subspecies, rather than a variety, of *I. pes-caprae* because it is extraordinarily variable, especially in habit, leaf shape, and degree of branching of the cyme. Possibly varieties may be distinguished within this vast population.

Subspecies *brasiliensis* is pantropical (except in the Indian Ocean area, where it is replaced by subspecies *pes-caprae*); in Micronesia it is known from the Marianas: Uracas, Asuncion, Agrigan, Pagan, Alamagan, Guguan, Sarigan, Anatahan, Saipan, Tinian, Rota, Guam; from the Carolines: Palau, Sonsorol, Tobi, Helen Reef, Yap, Ulithi, Eauripik, Woleai, Ifaluk, Lamotrek, Satawal, Namonuito, Truk, Ponape, Kusaie; from Wake; from the Marshalls: Eniwetok, Lae, Kwajalein, Majuro, Jaluit; from Nauru; from Ocean (Banaba);

from the Gilberts: Butaritari, Tarawa. We have the impression that this plant may be introduced in the Marshalls and Gilberts, since it is known mostly from atolls where there has been much recent foreign human activity and disturbance. A seedling, probably of this species, was once found by us in beach drift on Likiep, where the plant is otherwise unknown, and on Arno, a seed of this species was found in the crop of a tern (*Gygis alba*) by J. T. Marshall. *Ipomoea pes-caprae* is not known on Arno, which has been thoroughly searched for plants, but is known from Majuro, a few miles away. If the plant were of other than recent introduction in the Marshalls it might be expected to have reached all or most of these atolls and to be much more common than it is, since ideal habitats for it are abundant. It is typically a beach plant, but in the Marianas it is also found in open places at all altitudes.

USES.—Various parts are used as medicine (Ulithi, Mogmog I.: *Lessa* in 1949) or as an ingredient in some medicines (Woleai, Falalis I.: *Alkire* 70). The root contains starch and is used medicinally (Guam: Safford, 1905). The turniplike roots given off by the rhizome are prized as a purgative; leaves are boiled and used for external application for stomach ache and colic; the boiled juice is said to be good for rheumatism (Palau, Okabe, 1940). Leaves are crushed, wrapped in "ul" (*Musa paradisiaca*), squeezed in well water, and the resulting liquid is given to a newborn baby to drink (Ifaluk: *Abbott & Bates* 73). The leaves are applied to bruises and to the head for headache, they are boiled and applied as a poultice to boils and cuts; an infusion made from the leaves is used as a tea for abscesses and boils and as a douche during pregnancy. Some say this plant should be used only externally; it has a large rose-purple flower; it is often mistaken for haililai (plant unidentified) or abodu (*Stictocardia campanulata*) (Guam: Whiting ms., 1965). On Sonsorol it is believed that if the flower is picked, it will rain within 24 hours (*Berry* 11). It is an important sand-binding plant (Guam: Safford, 1905).

VERNACULAR NAMES.—

fofegau halae (Marianas: *Gaudichaud* s.n.)
 alalag-tasi (Marianas: von Prowazek, 1913)
 alaiyai (Saipan: Hosokawa, n.d.)
 alaihai-tasi (Guam: Safford, 1905)
 alalag (Guam: *Whiting* C16)

alalag-tasi (Guam: Safford, 1905; Whiting, ms., 1965)
 alalag-tassi (Guam: *Gaudichaud*, 1826)
 alalai sabana (Guam: *Nelson* 249)
 alalai-tasi (Guam: Safford, 1905; Whiting, ms., 1965)
 alalak (Guam: Whiting, ms., 1965)
 halihai (Guam: *Nelson* 180; *Seale* in 1900)
 kabeasaong (Palau: *Fosberg* 32391)
 kebeaschol (Palau: Otobed, 1967, 1971; *Salsedo* 138)
 kebeas choll (Palau: *Hardy* 40)
 kebeas el choll (Palau: *Owen* 11)
 kebeas-ol (Palau: Hosokawa, n.d.)
 kebias ol (Palau: Okabe, 1943)
 kobeas ol (Palau: Okabe, 1941)
 halabaru (Sonsorol: *Berry* 11)
 gunbairihirungao (Yap: St. John, 1970)
 rakodorip (Yap: Hosokawa, n.d.)
 wathol (Yap: *Wong* 309)
 parabwal (Ulithi: *Lessa* in 1949)
 harabwal (Eauripik: *Fosberg & Evans* 47129)
 garabwal (Woleai: *Alkire* 70)
 harawal (Woleai: *Evans* 440)
 kawadui (Woleai: *Wong* 14)
 gareb wal (Ifaluk: *Abbott & Bates* 148, 73)
 hualimá (Lamotrek: *Fosberg & Evans* 46767)
 öröpwöjn (Truk: *Wong* 247)
 arapual (Satawan: *Anderson* 1102)
 arapwûl (Satawan: *Anderson* 1123)
 tihuuhe (Kapingamarangi: *Fosberg* 26096)
 shonshol (Ponape: *Glassman* 2778)
 sonjol (Ponape: *Bascom* T83)
 sonsol (Ponape: *Glassman* 2778; *Fosberg* 26335 (*Bascom* T83))
 uantal (Ponape: Christian, 1899)
 antal (Ponape: Christian, 1899)
 ooba (Kusaie: Hosokawa, n.d.)
 marjinejojo (Majuro: St. John, 1951)
 ireegogo (Nauru: Burges, ms., ca. 1935; von Prowazek, 1913)
 ruku (Tarawa: Luomala, 1953)
 te ruku (Tarawa: Catala, 1957, citing Catala 152)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Schumann and Lauterbach, 1901:517 (citing Lesson); *Gaudichaud* s.n. (G).

Uracas: W side of S coast, below 400 ft [120 m], *Falanruw* 2209 (US).

Asuncion: SW coast, 100 ft [30 m], *Falanruw* 2280 (US).

Agrigan: *Marche* 298 (P, Fo); SW coast below 300 ft [90 m], *Falanruw* 2184 (US, BISH); mid-west coast, 15 ft [5 m], *Falanruw* 2348 (US); village, *Fosberg* 31429 (US).

Pagan: *Marche* 149 (P, Fo); *Bonham* 21 (US, Fo); Isthmus, *Anderson* 565 (US, BISH, Fo, NY, L); Fresh Water Lake, *Fosberg* 31396 (US); Laguna, *Villagomez* JV-D5 (US); airstrip, *Moore* 308 (US); Mt. Pagan, 300 ft [90 m], *Moore* 368 (US).

Alamagan: Partido village, *Fosberg* 31645 (US, BISH); SSW coast, *Falanruw* 1956 (US).

Guguan: W coast below 50 ft [15 m], *Falanruw* 1800 (US).

Sarigan: 0–20 m, *Evans* 2429 (US, BISH, Fo, NY); 0–75 ft [0–20 m], *Falanruw* 1775 (US).

Anatahan: Sea level, *Falanruw* 1665 (US); S of NW tip of island, 0–10 m, *Evans* 2460 (US, BISH, Fo, NY).

Medinilla: Swedberg, ms., 1974.

Saipan: *Stephens* 60 (Fo); seashore, *Kanehira* 1021 (FU); Charan-Kanoa, 10 ft [3 m], *Hosaka* 3023 (US, BISH); just N of Agingan Pt., SW corner of island, *Fosberg* 25251 (US, BISH, Fo, NY, L).

Tinian: *Okatani* 65 (FU); *Kondo* in 1952 (BISH), 28 (BISH); beach, E side of Mt. Lasso, E side of island, *Fosberg* 24909 (US, BISH, Fo); Lake Hagoya, N end of island, *Fosberg* 24789 (US, BISH, Fo).

Rota: Hosokawa, n.d.

Guam: Endlicher, 1835:173 (citing Lesson); *Hombroen* in 1841 (P); *McGregor* 545 (US, BISH); *G.E.S.* 71 (US, BISH, NSW); Merrill, 1914:132; near mouth of Ylig River, *Rodin* 775 (US); beach ½ mi [0.8 km] W of Agaña, *Moore* 135 (US); Agaña, *Seale* in 1900 (BISH), *Whiting* C16 (Fo); beach E of Barrigada, *Steere* 135 (US); near Talisay, 150 m, *Fosberg* 35262 (US, BISH, Fo); Oca Pt., *Glassman* 134 (Fo); Mt. Tenjo, 320 m, *Bryan* 1111 (BISH); Marine Beach, *Pedrus* 7 (GUAM); Pago, along river bank, *Nelson* 249 (BISH); Pity, *Nelson* 180 (US, BISH); Tagachan Bay, *Stone* 4019 (BISH, GUAM); Togcha Bay, Jones Beach, *Stone* 4463 [4462?] (GUAM).

CAROLINE ISLANDS.—Palau: Koror: *Owen* 11 (US, BISH); Ngetmeduch rock, *Hardy* 73 (US). Babeldaob: E coast, Ngatkip, Airai, 0–5 m, *Fosberg* 32391 (US, BISH, Fo, NY, L); Marikyoku, *Kanehira* 381 (FU). Malakal: Dechel, *Hardy* 40 (US, BISH). Peli-liu: *Salsedo* 138 (US); N end of island, *Fosberg* 26011 (US, BISH).

Sonsorol: *Sonsorol* I., *Berry* 11 (US); beach from village to S tip of island, *Hardy* 149 (US, BISH).

Tobi: causeway through center of island, *Hardy* 142 (US, BISH).

Helen Reef: *Salsedo* 387 (US).

Yap: *Kamiya* 131 (TI); *Wong* 309 (US, Fo); Gillman Colony road, 15 m, *Cushing* 386 (US).

Ulithi: Asor I., *Fosberg* 46438 (US, BISH, Fo, NY, L, P, TI, A); Mogmog I., *Fosberg* & *Wong*

25493 (US, BISH), *Lessa* in 1949 (BISH); Falalap I., 3 m, *Fosberg* 46974 (US, Fo, HAW, MO); Sorlen I., 5 m, *Evans* 408 (US, Fo, BISH, L, A, NY).

Eauripik: Eauripik I., 1–2 m, *Fosberg* & *Evans* 47129 (US).

Woleai: Utagal I., *Wong* 14 (US, BISH, Fo, NY); Falalis I., *Alkire* 70 (US); Falalap I., *Evans* 440 (Fo, BISH, US).

Ifaluk: *Abbott* & *Bates* 148 (US); S shore of Ella I., *Abbott* & *Bates* 73 (US).

Lamotrek: Lamotrek I., 3 m, *Fosberg* & *Evans* 46767 (US).

Satawal: Satawal I., S side, *Fosberg* 46949 (seedling) (US).

Namounito: Ulul I., observed, common on most islets, *Stone*, 1959:103.

Truk: *Koidzumi* in 1915 (TI); *Wong* 247 (US, Fo). Dublon: Natsushima, *Takamatsu* 63 (BISH). Tol (Suizoto): *Takamatsu* 26 (BISH).

Etal: Seen by Anderson, but not collected.

Lukunor: Seen by Anderson, but not collected.

Satawan: Moch I., *Anderson* 1123 (US, BISH, Fo, NY, L); Satawan I., *Anderson* 1102 (US, BISH, Fo, NY, L).

Kapingamarangi: Hare I.: *Fosberg* 26096 (US, BISH, Fo, NY); *Niering* 727 (US, Fo), 691 (US, Fo, BISH). Werua I.: *Niering* 586 (US).

Ponape: *Kamiya* 218 (TI), 277 (TI); *Bascom* T83 (US); U District, N coast between Ipuak and U, 1–5 m, *Fosberg* 26335 (US, BISH); Saputik I., *Glassman* 2778 (US, BISH); Tamon, *Takamatsu* 881 (BISH).

Kusaie: *Kanehira* 1367 (NY, FU); valley S of Lele Harbor, *Fosberg* 26642 (US, BISH); Mot, *Takamatsu* 443 (BISH).

WAKE ISLAND.—*Fosberg* 34473 (US). Peale I.: *Pollock* & *Bryan* 22a (BISH); *Lyons* 24 (BISH). Area D: *Gaston* in 1953 (BISH).

MARSHALL ISLANDS.—Eniwetok: Eniwetok I., *Fosberg* 24287 (US, BISH); Iguir I., *St. John* 23733 (BISH); Engebi I., *Fosberg* 24404 (US, BISH, Fo, NY, L), *St. John* 23778 (US., BISH); Aomon I., *St. John* 23831 (BISH).

Lae: Lae I., *Fosberg* 33999 (US); Loj I., *Fosberg* 34044 (US).

Kwajalein: Kwajalein I., *Fosberg* 26480 (US, BISH, Fo, NY, L); Bennett (Bikej) I., *Fosberg* 26506 (US, BISH, Fo, NY, L).

Majuro: Dalap (Salome) I., *Fosberg* 26910 (US, BISH, Fo, NY, L); Majuro I., *St. John* 1951:285.

Jaluit: *Koidzumi* in 1915 (TI); Schumann and

Lauterbach 1901:517 (citing Schwabe); Engler 1897: 225; Jaluit I., Sydney Pier area, *Fosberg 26709* (US, BISH, Fo, NY, L).

NAURU ISLAND.—*Burges 130* (NSW), *140* (NSW).
BANABA (OCEAN I.).—*Rhone 45* (NSW).

GILBERT ISLANDS.—Butaritari: Butaritari I., *Herbst & Allerton 2699* (US).

Tarawa: Uncommon, seen only in some abundance in Betio and near the landing place at Bairiki, Catala 1957:97 (citing Catala 152); seen in 1967 by Sachet; Betio, lagoon side, *Adair 98* (US), Luomala 1953:25.

Ipomoea quamoclit L.

Ipomoea quamoclit L., Sp. Pl., 159, 1753.—Safford, Contr. U.S. Nat. Herb., 9:299, 1905.—Otobed, ms., 1967; Guide List Plants Palau Is., 1971.—Stone, Micronesica, 6:494, 1971.

Convolvulus pennatus Desrousseaux in Lamarck, Encycl. Méth., 3:567, 1791 [1792].

Quamoclit vulgaris Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:434, 1833.

Quamoclit pennata (Desrousseaux) Bojer, Hort. Mauriti., 224, 1837 [as *Q. pinnata*].—Merrill, Phil. Jour. Sci. Bot., 9:133, 1914.

Quamoclit quamoclit (L.) Britton in Britton & Brown, Ill. Fl. N. U.S., 3:22, 1898.—Safford, Contr. U.S. Nat. Herb., 9:363, 1905.

Slender glabrous twiner; leaves pinnately divided into linear or filiform lobes; inflorescences axillary with peduncles much longer than leaves, 1–several-flowered; bracts nearly obsolete; pedicels 1–3 cm long, tending to be thickened toward apex; sepals oblong, obtuse to rounded, mucronate; corolla bright red (rarely white), about 3 cm long, very narrowly funnelform, limb short but deeply lobed; capsule ovoid at apex, glabrous, tending to split rather irregularly, valves thin, seeds glabrous, mottled brownish or black.

Pantropical, a cultivated ornamental, said to be of tropical American origin, freely naturalized in warm countries; in Micronesia known thus far from Tinian, Guam, Palau, Yap, and Ponape; recent collections from cultivated plants; in Yap said to be a Japanese introduction.

USES.—Planted by the natives as a garden plant (Guam: Safford, 1905).

VERNACULAR NAMES.—

asangao (Palau: Otobed, 1967, 1971)

cabello del angel (Guam: G.E.S. 172; Safford, 1905)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Tinian: Lake Hagoya, N end of island, 1–10 m, *Fosberg 24791* (US, BISH, Fo, NY, L).

Guam: *Marche 207* (US); *Nelson 407* (Bish); G.E.S. 172 (NSW, BISH); Merrill, 1914:133 (citing G.E.S. 172); Manguuao, 65 m, *Fosberg 35618* (US).

CAROLINE ISLANDS.—Palau: Koror I.: *Otobed 44* (US); Tngeronger, *Blackburn 193* (US); *Cheatham 36* (US).

Yap: *Wong 335* (US, Fo, NY, BISH).

Ponape: Parakiet, *Salomon & George 38* (US).

Ipomoea sepiaria Koenig ex Roxburgh

Ipomoea sepiaria Koenig ex Roxburgh, Fl. Ind., ed. Carey & Wallich, 2:90, 1824.—Hosokawa, Trans. Nat. Hist. Soc. Formosa, 28:156, 1938.—Hosokawa, ms., n.d.

Convolvulus maximus sensu auct. [non L.f., Suppl., 137, 1781].

Ipomoea maxima sensu auct. plur. [non (L.f.) Sweet, Hort. Brit., ed. 2, 372, 1830].—van Ooststroom, Blumea, 3:526, 1940.

Herbaceous twiner or creeper, glabrous to hirsute; leaves glabrous extremely variable, broadly ovate to orbicular or reniform, acuminate, cordate at base, entire, minutely ciliate; peduncle thick, bearing an umbellate cyme of 5 to 10 flowers; sepals glabrous, elliptic-oblong, 4–6 mm long, obtuse, mucronulate; corolla tubular funnelform, 2–2.5 cm long, white to pale lilac, purple in center; stamens unequal, included; style included, stigmas 2, glabrous; capsule glabrous, depressed-globose, 6–7 mm high; seeds densely tomentose with longer hairs on margin. (We have not seen this species; description is condensed from van Ooststroom, 1940, 526).

India and Ceylon to Malay Archipelago, Hainan and Formosa; in Micronesia found once in 1937 in Yap.

CAROLINE ISLANDS.—Yap: “on a waste place,” Hosokawa, 1938:156 (citing Hosokawa 8926).

Ipomoea setifera Poiret

Ipomoea setifera Poiret in Lamarck, Encycl. Méth., 6:17, 1804.

A fairly common tropical American species, a small-flowered variety of which has a pantropical scattered distribution including a number of locali-

ties in the Pacific islands. The large-flowered plant has not been found in the Indo-Pacific area.

The small flowered plant has hitherto been regarded as a separate species, *I. fimbriosepala*, but since the only difference that we have found is in the size of the corolla, we prefer to combine it with *I. setifera*. We are not aware of any available name in varietal rank, so we are proposing the following combination.

***Ipomoea setifera* var. *fimbriosepala* (Choisy)
Fosberg, new combination**

Ipomoea fimbriosepala Choisy in de Candolle, Prodr., 9:359, 1845.—Hallier f., Bot. Jahrb., 18:143, 1893.—van Ooststroom, Fl. Males., I, 5:561-562, 1958.

Aniseia hastata Meissner in Martius, Fl. Bras., 7:319, 1869.

Twiner, glabrous to somewhat pubescent; leaves quite variable, generally longer than wide, acuminate to acutish, extreme apex obtuse or emarginate, base hastate or sagittate, basal lobes pointed or rounded, petiole shorter than blade; peduncles solitary in axils, to 3-4 cm, bearing single pedicellate flowers, or simple or once compound dichasia, these becoming very loose, nodes bearing foliaceous broadly ovate mucronate bracts 5-15 mm long, pedicels becoming thick and elongating to 2-3 cm in fruit—entire inflorescence reaching 10 or more cm in fruit; sepals unequal, broadly ovate, outer ones largest, to 2 cm long or even 2.5 cm in fruit, with three strong keels or wings longitudinally on the back, these usually dentate toward base; corolla funnellform, flaring distally, 2.5-4 cm long, purple, darker in center; fruit ovoid to globose, 1-1.5 cm long, splitting into 4 hard woody ovate valves, spreading at tips; seeds black, puberulent.

With a Guam specimen of *Ipomoea triloba* L. collected by the *Astrolabe* expedition in 1828 there is a specimen with strongly and narrowly sagittate leaves and heavy woody fruits resembling those of *Aniseia*, within which it would clearly go to *A. hastata* Meissner. The latter was first described as *Ipomoea fimbriosepala* Choisy and has been retained in *Ipomoea* by most modern authors. We are informed by Prof. Walter Lewis that the pollen of this species (preparation from *Macedo 1675* (US)) is notably spinulose, while that of the several other species of *Aniseia*, including *A. martinicensis* (Jacquin) Choisy, is smooth. Hence we regard this species as an *Ipomoea* in spite of the *Aniseia*-like

fruit. There is an excellent illustration of this plant as *Ipomoea fimbriosepala* Choisy in van Ooststroom (1958, fig. 5).

Pantropical, commonest from Brazil to Argentina, but scattered in Africa, Madagascar, Mauritius (syntype localities), and several Pacific islands. In Micronesia it has not been found since the original collection on Guam, but should be looked for. It is impossible for us to determine if it is native or introduced in the Pacific islands.

MARIANAS ISLANDS.—Guam: s.l., in 1828, *Astrolabe* [Lesson?] 58 in part (P).

***Ipomoea triloba* L.**

Ipomoea triloba L., Sp. Pl., 161, 1753.—Merrill, Phil. Jour. Sci. Bot., 7:145-208, 1912; 9:132, 1914.—Hosokawa, Bull. Biogeogr. Soc. Jap., 7:199, 1937.—Tuyama, Jour. Jap. Bot., 20:226-229, 1944.—Glassman, Bishop Mus. Bull., 209:100, 1952.—Fosberg, Atoll Res. Bull., 68:6, 1959.—Stone, Micronesica, 6:494, 1971.—Hosokawa, ms., n.d.

Convolvulus trilobatus Gaudichaud, Bot. Voy. Uranie, 68, 1826 [nom. nud., probably error for *C. trilobus* (L.) Desrousseaux].—Safford, Contr. U.S. Nat. Herb., 9:248, 1905.

Ipomoea mariannensis Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:468, 1833; in de Candolle, Prodr., 9:383, 1845.—Safford, Contr. U.S. Nat. Herb., 9:299, 1905.

Convolvulus mariannensis Gaudichaud ex Safford, Contr. U.S. Nat. Herb., 9:247, 1905 [in synonymy; apparently ascribed to Gaudichaud by error, as the latter did not publish this name].

Subglabrous twiner with cordate leaves varying from entire to remotely repand-dentate to trilobate, usually less than 6 cm across; peduncles thick, bearing irregularly umbelloid fastigate cymes of 1 to 7 flowers at summits; calyx 6-8 mm long, sepals narrowly oblong to oblong-lanceolate, mucronate, long-villous especially on margins; corolla funnellform, dull pinkish or pinkish purple, up to 2 cm long; stamens and style included; capsule globose, 5-7 mm high, sparsely long pilose, strongly beaked by dried style base; seeds smooth, dark brown.

Pantropical, said to be of tropical American origin; in Micronesia known from Marianas—Saipan, Tinian, Guam; Carolines—Palau, Yap, Truk, Ponape; Marshalls—Kwajalein. Found mainly in disturbed or more or less open places, along roadsides, and in brush or thickets.

VERNACULAR NAMES.—

nedgut (Saipan: *Hosaka 3004*)

fofegou (Guam: Gaudichaud, 1826)
 fofgu (Guam: Safford, 1905)
 netkort (Guam: Nelson 107)
 galli ngo boca roro (Yap: Wong 468)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Saipan: *Kanehira* & *Hatusima* 4314 (FU); Tanapag, *Fosberg* 25261 (US, BISH, Fo, NY, L); Charan-Tarhoho, 100 ft [30 m], *Hosaka* 3004 (US, BISH, Fo).

Tinian: Lake Hagoya, 1–10 m, *Fosberg* 24797 (US, BISH, Fo).

Guam: *Nelson* 107 (BISH); *McGregor* 450 (US, BISH); *Fosberg* 43414 (US, BISH, Fo, NY, L); *Astrolabe* [Lesson?] 58 in part (P); Merrill 1914:132 (citing *McGregor* 450); Agaña, 2 m, *Fosberg* 31936 (US, BISH, Fo); Inarajan, *Marche* 237 (P, Fo); road between Merizo and Inarajan, 5 m, *Fosberg* 35447 (US, BISH, Fo, NY, L); 2–3 km W of Yona, 100–130 m, *Fosberg* 35295 (US, BISH, Fo, NY); Asan Pt., *Anderson* 6 (US, BISH, Fo); Comarianas (Fonte) hills above Asan, 175 m, *Fosberg* 25427 (US, BISH, Fo, NY, L); 2 mi [3.2 km] W of Agat, *Moore* 275 (US); Talofof village, *Necker* 214 (US); Pati Pt., *Necker* 334 (US); Andersen Air Force Base, *Moran* 4432 (BISH, Fo); Menengon savannas, *Pedrus* 69 (BISH, GUAM); *Stone* 4838 (GUAM); Piti, *Swezey* in 1936 (BISH); Ritidian Pt., *Stone* 4712 (GUAM); OSIR Rd, Apra Harbor, *Stone* 4721 (GUAM).

CAROLINE ISLANDS.—Palau: Koror: hospital, *Blackburn* 202 (US). Malakal I.: causeway from Koror, *Evans* 549 (US, Fo, HAW, K, MO).

Yap: s.l., *Kanehira* & *Hatusima* 4339 (FU), 70 ft [20 m], *Wong* 468 (US, BISH, Fo); *Fujikawa* in 1939 (TI); across from Catholic mission, *Blackburn* 247 (US); Tomil I., 50 ft [15 m], *Hosaka* 3268 (US, BISH, Fo, NY); Dogol, *Tuyama* in 1939 (TI); Takiol, *Takamatsu* 1853 (BISH).

Truk: Fefan: on Mt. Tuktyap, *Hosokawa*, 1937: 199 (citing *Hosokawa* 8387).

Ponape: Colonia, *Glassman* 2773 (US, BISH); 1 m, *Hatusima* in 1939 (FU).

MARSHALL ISLANDS.—Kwajalein: Kwajalein I., *Fosberg* 39487 (US, BISH, Fo).

A number of the above cited specimens that are slightly coarser, slightly larger flowered than the others have been indicated by Dr. Daniel Austin (pers. comm.) as probably representing a putative

hybrid between *Ipomoea lacunosa* and *Ipomoea trichocarpa*, which has become widespread and which extraordinarily resembles *Ipomoea triloba*.

While we admit the possibility of such a hybrid (although neither parent is found anywhere near Micronesia) we cannot confidently distinguish these plants from *Ipomoea triloba*. Hence we prefer to continue to consider them within our circumscription of *I. triloba* until more convincing characters are pointed out to separate them.

The sheets in question are: from Saipan—*Hosaka* 3004, *Fosberg* 25261; from Guam—*Fosberg* 43414, 35447, 31936, *Necker* 214, 334, *McGregor* 450; from Yap—*Hosaka* 3268, *Blackburn* 274. The following two from Palau have not been examined by Austin, but may also belong with the above list, judging by flower size: *Blackburn* 202, *Evans* 549.

Merremia Dennstedt ex Hallier f.

Merremia Dennstedt ex Hallier f., Bot. Jahrb., 16:581, 1893.

Twining; peduncles axillary, bearing flowers in cymes; corolla broadly funnelform or campanulate; stamens and style included; anthers (at least in Micronesian species) curved or spirally coiled; pollen grains smooth; stigmas 2, globose; capsule splitting into 4—many ovate to lanceolate valves.

This genus is difficult to distinguish convincingly from *Ipomoea*. Its chief, if not only, characters are smooth pollen grains and coiled anthers. The corolla is generally broader and has a rather different appearance; however the only good key characters are difficult to use without good specimens. It may be that the pollen grain surface has been given too much importance in this family, since there are so few correlated characters.

Merremia aegyptia (L.) Urban

Merremia aegyptia (L.) Urban, Symb. Antill., 4:505, 1910.
Ipomoea aegyptia L., Sp. Pl., 162, 1753.

Conspicuously pilose herbaceous twiner; leaves divided to base (or compound) into 5 narrowly obovate, acuminate leaflets; peduncles bearing loose dichasia with up to 9 flowers, small bracts; sepals ovate, conspicuously long-hirsute, except at tips; corolla white, about 2 cm long; capsule depressed-globose, about 12 mm high; seeds glabrous.

Key to Micronesian Species of *Merremia*

1. Leaves lanceolate, hastate at base *M. tridentata* ssp. *hastata* 2
1. Leaves cordate, entire to deeply lobed or cut 2
2. Leaves peltate *M. peltata* 3
2. Leaves not peltate 3
3. Leaves digitately divided into elliptic acuminate lobes 4
4. Plant very hairy *M. aegyptia* 5
4. Plant essentially glabrous *M. tuberosa* 5
3. Leaves entire to trilobed or lyrate lobed 5
5. Leaves generally over 5 cm across; flowers 2.5 cm long *M. umbellata* 6
5. Leaves generally less than 5 cm; flowers at most 2 cm long 6
6. Leaves with tuberculate petioles; corolla at most 1 cm long; outer sepals with mucro turned outward *M. hederacea* 6
6. Petioles with few or no tubercles; corolla 1.5–2 cm long; outer sepals with mucro erect *M. gemella* 6

Pantropical, known in Micronesia only from Guam where it was first found after World War II. Grows generally in disturbed open places.

MARIANAS ISLANDS.—Guam: Ritidian Pt., 10 m back of beach, *Anderson 227* (US, BISH, Fo, NY).

Merremia gemella (Burman f.) Hallier f.

Merremia gemella (Burman f.) Hallier f., Bot. Jahrb., 16:552, 1893.—Merrill, Phil. Jour. Sci. Bot., 9:132, 1914.—Stone, Micronesica, 6:495, 1971.—Hosokawa, ms., n.d.
Convolvulus gemellus Burman f., Fl. Ind., 46, t. 21, f.1, 1768.

Slender sparsely pilose herbaceous twiner; leaves cordate, usually somewhat trilobate, acuminate, petiole longer than blade, generally without tubercles; peduncles usually longer than leaves to at least 12 cm, bearing an open dichasium of 3–9 (–11) flowers; sepals slightly pubescent, concave, ciliate, broad at apex, emarginate, shortly mucronate, mucro erect; corolla yellow, 1–2 cm long, anthers curved, capsule depressed-globose, wrinkled when dry; seeds puberulent.

Southeast Asia to Australia, in Micronesia known only from Guam where it is probably introduced; growing in disturbed places.

VERNACULAR NAME.—ñyetcor (Guam: *G.E.S. 18*, Merrill, 1914)

MARIANAS ISLANDS.—Guam: *G.E.S. 18* (US, BISH); Merrill, 1914:132; 1 mi [1.6 km] S of Piti Village, *Moore 39* (US), 225 (US); Agaña swamp, 1 m, *Fosberg 31231* (US, BISH, Fo, NY, L); Naval Station fuel depot, *Simpson JS 1* (US); Talofof River valley, *Stone & Fletcher 5023* (GUAM).

Merremia hederacea (Burman f.) Hallier f.

Merremia hederacea (Burman f.) Hallier f., Bot. Jahrb., 18:118, 1894.—Merrill, Phil. Jour. Sci. Bot., 9:132, 1914.—Stone, Micronesica, 6:495, 1971.—Hosokawa ms., n.d.
Evolvulus hederaceus Burman f., Fl. Ind. 77, t. 30, f.2, 1768.
Merremia convolvulacea Dennstedt, Schl. Hort. Malab., 39, 1818 [nom. nud.].—Hallier f., Bot. Jahrb., 16:552, 1893.—Volkens, Bot. Jahrb., 31:473, 1901.
Convolvulus hederaceus, sensu Merrill, Phil. Jour. Sci. Bot., 9:132, 1914 [non L., Sp. Pl. 154, 1753].

Slender subglabrous or very sparsely pilose herbaceous twiner, tending to root at nodes; leaves small, cordate, entire to more or less trilobed, acute or slightly acuminate; peduncles somewhat exceeding leaves or shorter, bearing an open to rather crowded dichasium of 3–9 flowers; sepals glabrous, truncate to emarginate, with a short stout mucro that tends to turn outward; corolla yellow, less than 1 cm long; anthers curved, style subequal with corolla or slightly exserted; capsule conic to depressed-globose, wrinkled when dry; seeds pubescent.

Old World Tropics; in Micronesia found in Guam and Yap. Growing in open grassy places, weedy roadsides and other disturbed places.

VERNACULAR NAME.—galili ne sēpan magacol (Yap: *Wong 470*)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Guam: *Marche 159* (P, Fo); Merrill, 1914:132 (citing Thompson 20); 2–3 km W of Yona, 100–130 m, *Fosberg 35294* (US, BISH); few

miles N of Sumai, *Conover 512* (BISH); lower Fonte River, W of Agaña, 4 m, *Fosberg 31240* (US, BISH, Fo, NY, L); 4 mi [6.4 km] NE of Agaña, *Rodin 549* (US); 2 mi [3.2 km] W of Agaña, *Moore 162* (US); 1 mi [1.6 km] S of Piti, *Moore 231* (US); Pity, *Nelson 105* (NY); OSIR Rd., Apra Harbor, *Stone 4272* (GUAM).

CAROLINE ISLANDS.—Yap: *Wong 470* (US, Fo); *Koidzumi* in 1915 (TI); Volkens 1901:473 (citing Volkens 229).

Merremia peltata (L.) Merrill

Merremia peltata (L.) Merrill, Int. Rumph. Herb. Amb., 441, 1917.—Glassman, Bishop Mus. Bull., 209:100, 1952.—Stone, Micronesica, 6:496, 1971.—Hosokawa, ms., n.d.

Convolvulus peltatus L., Sp. Pl., 194, 1753.—Gaudichaud, Bot. Voy. Uranie, 68, 1826.—Safford, Contr. U.S. Nat. Herb., 9:248, 1905.

Ipomoea peltata (L.) Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:452, 1833.—Safford, Contr. U.S. Nat. Herb., 9:338, 1905.

Operculina peltata (L.) Hallier f., Bot. Jahrb., 16:549, 1893.—Safford, Contr. U.S. Nat. Herb., 9:338, 1905.—von Prowazek, Deutsch. Marianen, 119, 1913.—Merrill, Phil. Jour. Sci. Bot., 9:133, 1914.—Hosokawa, Bull. Biogeogr. Soc. Jap., 7:199, 1937.

Coarse glabrous twiner; leaves broadly cordate to orbicular, peltately attached, obtuse in general outline but very shortly and abruptly acuminate, strongly nerved; peduncles with a paniculate cyme of as many as 13 or more flowers; sepals glabrous, strongly concave or somewhat ventricose, to 2 cm long, obtuse, only slightly accrescent but becoming very firm and hard in fruit; corolla white or yellow, 5–6 cm long, ribs slightly glandular-puberulent without, broadly campanulate funnelform; capsule about 15 mm long, splitting into many lanceolate valves; seeds dull brown, densely long-pilose.

The distribution of the species is Indo-Pacific, from Africa to Tahiti; in Micronesia it is known from the Marianas—at least from Guam; Carolines—Palau, Yap, Truk, Ponape and Kusaie. It grows in forests and thickets. Both yellow- and white-flowered forms are known, the yellow-flowered form supposedly from the western part of the range. However, both colors are found in Micronesia, even on Ponape. The presence of this species in the Marianas is, to the best of our knowledge, not supported by any collection, even from Guam. A record from “Saipan, Tinian and Rota”

by von Prowazek is considered wholly doubtful.

USES.—Christian says that the leaves and seeds are used as an abortifacient (Ponape: Glassman, 1952:100).

VERNACULAR NAMES.—

lagoun (Guam: Gaudichaud, 1826)

lagun (Guam: Safford, 1905)

kebeas (Palau: *Emmons 112*; *Salsedo 151, 416*)

fidau (Truk: Hosokawa, 1937)

fitay (Truk: *Wong 288*)

ceul (Ponape: *Bascom 69*)

iol (Ponape: *Hosaka 3521*, Christian, 1899)

yol (Ponape: Christian, 1899; Glassman, 1952)

yool (Ponape: Hosokawa, n.d.)

pāla (Kusaie: *Fosberg 26572*)

para (Kusaie: Hosokawa, n.d.)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Guam: Gaudichaud, 1826: 68; Safford, 1905:338; Merrill, 1914:133.

CAROLINE ISLANDS.—Palau: Babeldaob: Garamiscan colony, Garamiscan (Almiokan) River, 0–20 m, *Fosberg 25765* (US, BISH, Fo); Aimeleek Exp. Station, *Kanehira 297* (NY); Nekken, *Emmons 112* (US BISH); Airraii, *Salsedo 416* (US); Madmosuk I. (W of Koror): 50 ft [15 m], *Stone 1303* (BISH). Koror: *Otobed 45* (US, BISH, Fo); T-dock road, 2 m, *Fosberg 32610* (US, BISH, Fo); Sansaro, *Salsedo 151* (US).

Yap: Tomil I., 75 ft [23 m], *Hosaka 3301* (US, BISH, Fo, NY).

Truk: 600 ft [185 m], *Wong 288* (US). Moen: edge of forest, 600 ft [185 m], *Hosaka 3428* (US); Nob Hill, 100–150 m, *Evans 1379* (US, HAW). Dublon and most other islets: Hosokawa, 1937:199.

Ponape: *Bascom 69* (US); Glassman, 1952:100 (citing Takamatsu 828 from Toleailuka, Takamatsu 921 from Oa, and Takamatsu 1102 from Mt. Nana-taut); Toleailuka, Mt. Seletereh, 650 ft [200 m], *Glassman 2726* (US); Net District, 200 ft [60 m], *Glassman 2769* (US); Mt. Peipalap, 500 ft [150 m], *Glassman 2775* (US); Ipuak, 50 ft [15 m], open places in abandoned fields and coconut groves, *Hosaka 3521* (US, BISH, Fo).

Kusaie: Lowest slopes and foot of Mt. Matante (Buache), S side, N of head of Lele harbor, *Fosberg 26572* (US, BISH, Fo, NY, L); Mt. Matante, *Hosokawa 9481* (A).

Merremia tridentata (L.) Hallier f.

Merremia tridentata (L.) Hallier f., Bot. Jahrb., 16:552, 1893.
Convolvulus tridentatus L., Sp. Pl., 157, 1753.

The nominate subspecies is not found in Micronesia.

Merremia tridentata ssp. *hastata* van Ooststroom

Merremia tridentata ssp. *hastata* van Ooststroom, Blumea, 3: 317, 1939.

Convolvulus hastatus Desrousseaux in Lamarck, Encycl., 3:542, 1789 [1792] [non Forskål, Fl. Aeg.-Arab., 203, 1775].

Merremia hastata Hallier f., Bot. Jahrb., 16:552, 1893 [nom. illegit.].—Hosokawa, ms., n.d.

Subglabrous herbaceous twiner with angled stems; leaves lanceolate with a cordate or hastate base, the basal lobes tending to be dentate, subsessile, a slightly tomentose area at base of blade attachment; peduncles with a 3-flowered cyme; sepals glabrous, ovate-lanceolate, acuminate; corolla about 1.5 cm long, yellow or white, funnelform; capsule subglobose, about 5 mm high, dehiscing irregularly from base or apex; seeds dark brown, glabrous.

Old World Tropics; in Micronesia collected thrice in Palau. Found in open places.

CAROLINE ISLANDS.—Palau: Hosokawa, n.d. (citing Hosokawa 6946, 9180); Ngelwa, Hosokawa 9180 (A); Babeldaob, Kamusetu, Almonogui, Hatusima 4867 (FU).

Merremia tuberosa (L.) Rendle

Merremia tuberosa (L.) Rendle in Thiselton-Dyer, Fl. Trop. Afr., 4(2):104, 1905.—Stone, Micronesica, 6:496, 1971.

Ipomoea tuberosa L., Sp. Pl., 160, 1753.

Operculina tuberosa (L.) Meissner in Martius, Fl. Bras., 7: 212, 1869.—Merrill, Phil. Jour. Sci. Bot., 9:132, 1914.—Hosokawa, ms., n.d.

Coarse glabrous twiner; leaves digitately divided to about 1–1.5 cm from base, lobes elliptic strongly acuminate; peduncles about as long as leaves, bearing dichasia of about 7 flowers; sepals about 3 cm long, ovate to broadly elliptic, obtuse to rounded, glabrous, accrescent in fruit to as much as 7 cm long and becoming very hard and woody; corolla bright yellow, funnelform-campanulate, 5 cm long, stamens and styles included; anthers spirally twisted; capsule depressed globose, about 2 cm high; seeds dull black, hairy on angles.

Pantropical, mostly in cultivation, probably of tropical American origin; in Micronesia known only from Saipan, Tinian, Rota, and Guam, in all of which it is either in cultivation or around old house sites, and from Kwajalein, where it was seen growing in a pot.

USES.—It is prized for its fruits surrounded by accrescent woody sepals, vaguely suggesting a rose and used in dried flower arrangements.

VERNACULAR NAMES.—

wood rose, wooden rose (English)

alarrak (Saipan: Hosokawa, n.d.)

MARIANAS ISLANDS.—Saipan: Hosokawa, n.d. (citing Tuyama 248, Momose s.n.)

Tinian: Carolinas Heights, seen by Stensland in 1951, not collected.

Rota: Hosokawa, n.d. (citing Tuyama 339, 500).

Guam: McGregor 551 (US, NY, NSW, BISH); Merrill, 1914:132 (citing McGregor 551); Nelson 527 (NY, BISH); Agaña Bay area, Moore 288 (US).

MARSHALL ISLANDS.—Kwajalein: seen growing in pot, 1956, by Fosberg.

Merremia umbellata (L.) Hallier f.

Merremia umbellata (L.) Hallier f., Bot. Jahrb., 16:552, 1893.
Convolvulus umbellatus L., Sp. Pl., 155, 1753.

Pantropical, *M. umbellata* var. *umbellata* mostly American, and not found in Micronesia; variety *orientalis* from East Africa to Thailand, Malaysia, Queensland, and Tahiti and probably from Ponape in Micronesia.

Merremia umbellata var. *orientalis* Hallier f.

Merremia umbellata var. *orientalis* Hallier f., Ver. 's Lands Plant., 1895:132, 1896.

Plants collected in Ponape and determined by T. Tuyama as *M. elmeri* Merrill, a Bornean species, seem, from notes we made in 1953 on the specimens in the Tokyo University Herbarium, more likely to belong to *M. umbellata* var. *orientalis*, though the notes are not detailed enough to be certain. The brief description written in Tokyo from the Ponape specimens follows. "Large plant, leaves cordate, not peltate; inflorescence umbellate, longer than leaves; flowers about 2.5 cm long; fruit splitting into many valves of unequal width; seeds densely long-pilose."

CAROLINE ISLANDS.—Ponape: *Koidzumi* in 1915 (TI); Matalanum, foot of Mt. Pagelkap, *Okabe* in 1941 (TI).

Operculina Manso

Operculina Manso, Enum. Subst. Braz., 16, 1836.

Coarse twining vines with large cordate leaves; cymes axillary, pedunculate, bracteate; sepals usu-

ally accrescent; corolla broadly funnelform to campanulate; stamens included, adnate to corolla tube, anthers becoming spirally twisted; style 1, included, stigmas 2, globose; ovary 2-celled, 2 ovules in a cell; fruit a capsule, the epicarp circumscissile, separating from the transparent endocarp, this eventually breaking irregularly.

A pantropical genus with two species in Micronesia, one probably native, the other introduced from America.

Key to Micronesian Species of *Operculina*

Stems strongly angled or alate; bracts 1.5–2 cm long	<i>O. turpethum</i>
Stems terete; bracts well over 2 cm long	<i>O. ventricosa</i>

Operculina turpethum (L.) Manso

Operculina turpethum (L.) Manso, Enum. Subst. Braz., 16, 1836.—Alkire, Micronesica, 10:3, 1974.

Convolvulus turpethum L., Sp. Pl., 155, 1753.

Ipomoea turpethum (L.) R. Brown, Prodr., 485, 1810.—Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:450, 1833.

Merremia umbellata sensu Kanehira, Enum. Micr. Pl., 400, 1935 [non (L.) Hallier f., Bot. Jahrb., 16:552, 1893].

Coarse subglabrous twiner with strongly angular or winged stems; leaves orbicular, cordate with a broad sinus, obtuse to rounded at apex, puberulent; peduncles with 1–3 flowers, pedicels becoming very thick, 3–4 cm long, bracts early caducous, less than 2 cm long; sepals orbicular, 2–3 cm long, sericeous, apex rounded, sharply mucronate, somewhat accrescent; corolla broadly campanulate, 5–6 cm long; capsule globose, about 1.5 cm long or somewhat larger; seeds black, glabrous.

Old World Tropics, widespread in the Pacific islands; in Micronesia known from the Carolines—Palau, Fais, Woleai(?), Ifaluk, Truk, Namoluk, Ponape, and Kusaie, with an old record purporting to be this species from Tinian, no doubt based on the Gaudichaud specimen cited below (Choisy, 1833:450). It is a vigorous liana growing in edges of forests, thickets and especially disturbed places. After World War II skeletons of dead trees in areas of heavy fighting on Peliliu, for example, were so covered by this vine as to appear to be living trees.

VERNACULAR NAMES.—

besbus (Palau: *Fosberg* 47471)

chonguched arkung (Palau: *Hardy* 42)

ligatchog (Woleai: *Alkire*, 1974)

lihatchog (Woleai: *Alkire* 74 (sterile))

afaamac (Truk: *Wong* 253)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—“Ile Tinian (Mariannes) *C. Gaud.*”? (P)

CAROLINE ISLANDS.—Palau: Ngarakabesang (Aarakabesan I.): 2–5 m, *Fosberg* 32377 (US, BISH, Fo, NY, L). Malakal I.: *Otobed* in 1974 (US, BISH); near Fisheries Development Sta., *Hardy* 42 (US). Aulupse’el I.: Ngerebe’ed beach, 2 m, *Fosberg* 47471 (US, BISH). Peliliu: S central part of island, 2 m, *Fosberg* 32005 (US, BISH); flat W of Bloody-nose Ridge, 6 m, *Fosberg* 32004 (US, BISH, Fo, NY); SW side of island 3–4 m, *Fosberg* 25982 (US, BISH, Fo); near airstrip, 2–4 m, *Fosberg* 47645 (US, Fo). Angaur: *Koidzumi* in 1915 (TI); central part of island, 4 m, *Fosberg* 25878 (US, BISH, Fo); E coast of island, 2–5 m, *Fosberg* 31977 (US, BISH, Fo, NY, L).

Fais: Yldow, 15 m, *Fosberg* 46721 (Fo).

Woleai: Falalis I., *Alkire* 74? (sterile).

Ifaluk: Falalap I., 1–2 m, *Fosberg* 47242 (US, HAW, Fo, NY).

Truk: *Wong* 253 (US, BISH, Fo).

Namoluk: Namoluk I., *Marshall* 92 (US).

Ponape: Toletik, *Takamatsu* 991b (BISH).

Kusaie: Mot, *Takamatsu* 445 (BISH).

Operculina ventricosa (Bertero) Peter

Operculina ventricosa (Bertero) Peter in Engler & Prantl, Nat. Pfl., iv(3a):32, 1891.—Stone, Micronesica, 6:496, 1971.—

Fosberg, Falanruw, and Sachet, *Smithsonian Contr. Bot.* 22:37-38, 1975.

Convolvulus ventricosus Bertero in Colla, *Hort. Ripul.*, 37, 1824 [non Silva Manso, *Enum. Subst. Braz.*, 20, 1836].

Very coarse, extensive, appressed pubescent twiner, stems terete; leaves very large, to 30 cm or more across, orbicular cordate, very shortly acuminate, petioles 15-20 cm long; peduncles stout, to 30 cm long, with compact cymes of up to 7 flowers; bracts conspicuous, orbicular to oval, membranous, concave, pubescent, somewhat persistent, 2.5-4 cm long; sepals orbicular, obtuse, mucronulate, accrescent; corolla white, campanulate or broadly funnel-form, about 5 cm long; stamens strongly included, anthers tightly coiled; capsule globose, about 2.5 cm long; seeds black, glabrous.

A native of tropical America but has been present in Micronesia, in the Marianas, for a long time—it was collected by Marche in 1887 or 1888 on Pagan; known from Asuncion, Agrigan, Pagan, Alamagan, Anatahan, Saipan, Tinian, Rota, and Guam. Common in disturbed places, climbing in thickets and covering the ground in great mats; it has only recently become common in Guam, where it has been collected repeatedly near Northwest Field, beginning in World War II. It may have been introduced there from Saipan or Tinian on aircraft at that time. In recent years it has been collected here and there farther south on the island. M. V. C. Falanruw informs us that it had become quite common by 1967 and 1968.

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Asuncion: lower SW slope, 150 ft [45 m], *Falanruw 2251* (US, BISH).

Agrigan: Trail around S side of island, *Fosberg 31617* (US); mid-west coast, 200 ft [60 m], *Falanruw 2329* (US).

Pagan: *Marche 148* (P, Fo); *Bonham 2* (US, Fo); Fresh Water Lake, 2-50 m, *Fosberg 31383* (US, BISH); airstrip, *Moore 306* (US).

Alamagan: Vicinity of Asongsong village, *Fosberg 31722* (US, BISH); SSW coast, below 500 ft [150 m], *Falanruw 1939?* (US).

Sarigan: Near village 10-100 m, *Evans 2337?* (US, BISH, Fo, NY).

Anatahan: *Falanruw 1988?* (US).

Saipan: *Courage 54* (US); *Lange 10* (BISH); Army Hill, *Courage 30* (US); Enarpi Point, *Lange*

35 (BISH); just S of Garapan, *Fosberg 25215* (US, BISH, Fo); Kannat Laulau, above Magicienne Bay, 75 m, *Fosberg 31273* (US, BISH, Fo, NY, L).

Tinian: N end of island, 100 ft [30 m], *Hosaka 2857* (US, BISH, Fo); S end of S plateau, *Kondo 9* (BISH); Marpo Valley, E of Tinian (former town), 60 m, *Fosberg 24812* (US, BISH, Fo, NY, L).

Rota: Slopes above As Malote, S side of island, 250 m, *Fosberg 31876* (US); Sasan Haya Bay, 10-30 m, *Sachet 1766* (US, BISH, Fo, NY, L); track from Poniya Pt, 350-500 m, *Evans 2191* (US, HAW, Fo, K).

Guam: 1 mi [1.6 km], S of Ritidian Point, *Moran 4523* (UC, BISH, Fo); N of Northwest Field, 500 ft [150 m], *Steere 168* (US); Northwest Field, 185 m, *Fosberg 35384* (US, BISH, Fo, NY, L); ½ mile [0.8 km] E of Barrigada and Pagat Point Area, 400-600 ft [120-180 m], *Moore 56* (US); Melojloj, 50 m, *Evans 1474* (US, HAW, Fo, MO, NY); Merizo and Agfayan Bay, *Stone 4911* (GUAM).

Stictocardia Hallier f.

Stictocardia Hallier f., *Bot. Jahrb.*, 18:159, 1894.—Gunn, *Brittonia*, 24:169-170, 1972.

Rivea, sensu Merrill, *Phil. Jour. Sci. Bot.*, 9:133, 1914 [non Choisy, *Mém. Soc. Phys. Hist. Nat. Genève*, 6:407, 1833].

Large twiners; leaves glandular beneath; peduncles axillary, bearing cymes; sepals elliptic to orbicular, greatly accrescent and thickened in fruit; corolla funnell-form-campanulate; stamens and style included, pollen spinulose; stigmas 2, globose; capsule completely enclosed by accrescent calyx, globose, 4-celled, the septa with transverse wings, wall thin, irregularly dehiscent leaving the septa and their wings enclosing seeds; seeds pubescent.

The genus differs from *Ipomoea* only in the glandular leaves, the thickened closed fruiting calyx, and the structure of the capsule. A few species of *Ipomoea* also have glandular leaves, but none of these species are Micronesian.

Pantropical, with one species in Micronesia.

Stictocardia campanulata (L.) Merrill

Stictocardia campanulata (L.) Merrill, *Phil. Jour. Sci. Bot.*, 9:133, 1914.—Kanehira, *Enum. Micr. Pl.*, 401, 1935.—Whiting, ms., 1965.—Gunn, *Brittonia*, 24:170-172, 1972.—Fosberg, Falanruw, and Sachet, *Smithsonian Contr. Bot.*, 22:38, 1975.—Hosokawa, ms., n.d.

Ipomoea campanulata L., Sp. Pl., 160, 1753.

Convolvulus tiliaefolius Desrousseaux in Lamarck, Encycl. Méth., 3:544, 1789 [1792].—Gaudichaud, Bot. Voy. Uranie, 70, 1826.

Ipomoea tiliaefolia (Desrousseaux) Roemer & Schultes, Syst. Veg., 4:229, 1819.

Rivea tiliaefolia (Desrousseaux) Choisy, Mém. Soc. Phys. Hist. Nat. Genève, 6:407, 1833.

Argyrea tiliaefolia (Desrousseaux) Wight, Ic., 4:12, t. 1358, 1850.—Safford, Contr. U.S. Nat. Herb., 9:188, 1905.

Stictocardia tiliaefolia (Desrousseaux) Hallier f., Bot. Jahrb., 18:159, 1894.—Stone, Micronesica, 6:497, 1971.

Rivea campanulata (L.) House, Muhlenbergia, 5:72, 1909.

Extensive but rather slender, short-pubescent twiner; leaves broadly ovate cordate with open sinus, apex slightly blunt-acuminate; peduncles 1-, rarely 3-flowered, mostly shorter than leaves; sepals about 15 mm long, the inner exceeding outer, almost truncate, remotely ciliate, enormously accrescent and becoming thick and spongy and completely enclosing the fruit; corolla delicate, lavender, narrowly campanulate but strongly flaring, 8–10 cm long, stamens and style included; fruiting sepals 4 cm long, closely investing capsule, capsule about 2.5–3 cm long, globose; seeds brown, shortly and sparsely sericeous.

Pantropical, widespread in the Pacific Islands; in Micronesia known from the Marianas—Alamagan, Sarigan, Anatahan, Saipan, and Guam; and the Carolines—Palau. Growing in thickets and edges of forest, its large lilac flowers are very conspicuous.

USES.—The children string the flowers on strings and sticks and are very fond of them as ornaments; the name “abubo” applies only to the flowers (Guam: Safford, 1905).

VERNACULAR NAMES.—

abubo (Guam: Safford, 1905; Merrill, 1914)

abubu (Guam: Whiting C16a)

abubu a las doce (Guam: Whiting, ms., 1965)

abuto apaca (Guam: Nelson 368)

alalag (Guam: Safford, 1905; Merrill, 1914)

alalag abubu (Guam: Nelson 259)

alalak (Guam: Nelson 48)

GEOGRAPHIC RECORDS AND SPECIMENS EXAMINED

MARIANAS ISLANDS.—Alamagan: around Partido village, Fosberg 31696 (US).

Sarigan (Saligan): Kanehira 2170 (NY); ridge near anchorage, 300 ft [90 m], Falanruw 1761 (US).

Anatahan: W coast, below 200 m, Falanruw 1706 (US).

Saipan: Kanehira 946 (NY, FU); 1080 (NY, FU), 3823 (FU).

Guam: Merrill, 1914:133–134; Marche 158 (P, Fo); G.E.S. 93 (US, BISH, NSW); Nelson 405 (BISH), 259 (BISH), 368 (BISH, NY); Whiting C16a (US); Gognga Beach, Tumon Bay, 2 m, Fosberg 43496 (US, BISH, Fo); Inarajan, Marche 238 (P); E coast, 2 mi [3.2 km] E of Yigo, Moore 272 (US); 1 km S of Barrigada, Fosberg 35287 (US, BISH, Fo, NY, L); Yigo, Nelson 48 (US); near Pago Bay, Stone 4313 (US, GUAM); La Cienaga, Stone 4926 (GUAM); Mochom, Stone 4955 (GUAM).

CAROLINE ISLANDS.—Palau: Koror: Kanehira 1935:401, citing Kanehira 2070, 2777.

Synonyms and Excluded or Misapplied Names

Aniseia hastata Meissner. See *Ipomoea setifera* var. *fimbriosepala* (Choisy) Fosberg

Argyrea tiliaefolia (Desrousseaux) Wight. See *Stictocardia campanulata* (L.) Merrill

Batatas Choisy. See *Ipomoea* L.

Batatas? crassicaulis Benth. See *Ipomoea fistulosa* Martius ex Choisy

Calonyction Choisy. See *Ipomoea* L.

Calonyction aculeata (L.) House. See *Ipomoea alba* L.

Calonyction album (L.) House. See *Ipomoea alba* L.

Calonyction album sensu Merrill, Hosokawa. See *Ipomoea macrantha* Roemer & Schultes

Calonyction bona-nox (L.) Bojer. See *Ipomoea alba* L.

Calonyction bona-nox sensu Schumann & Lauterbach. See *Ipomoea macrantha* Roemer & Schultes

Calonyction comospermum Bojer. See *Ipomoea macrantha* Roemer & Schultes

Calonyction speciosum sensu Engler. See *Ipomoea macrantha* Roemer & Schultes

Calonyction tuba (Schlechtendal) Colla. See *Ipomoea macrantha* Roemer & Schultes

Convolvulus aculeatus L. See *Ipomoea alba* L.

Convolvulus alsinoides L. See *Evolvulus alsinoides* (L.) L.

Convolvulus batatas L. See *Ipomoea batatas* (L.) Lamarck

Convolvulus brasiliensis L. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom

Convolvulus coeruleus sensu Safford. See *Ipomoea indica* (Burman) Merrill

Convolvulus congestus (R. Brown) Sprengel. See *Ipomoea indica* (Burman) Merrill

Convolvulus denticulatus Desrousseaux. See *Ipomoea littoralis* Blume

Convolvulus gemellus Burman f. See *Merremia gemella* (Burman f.) Hallier f.

Convolvulus hastatus Desrousseaux. See *Merremia tridentata* ssp. *hastata* van Ooststroom

- Convolvulus hederaceus* sensu Merrill. See *Merremia hederacea* (Burman f.) Hallier f.
- Convolvulus hederaceus* sensu Safford. See *Ipomoea indica* (Burman) Merrill
- Convolvulus indicus* Burman. See *Ipomoea indica* (Burman) Merrill
- Convolvulus mariannensis* Gaudichaud ex Safford. See *Ipomoea triloba* L.
- Convolvulus maritimus* Desrousseaux. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Convolvulus martinicensis* Jacquin. See *Aniseia martinicensis* (Jacquin) Choisy
- Convolvulus maximus* sensu auct. See *Ipomoea sepiaria* Koenig ex Roxburgh
- Convolvulus nil* sensu Safford. See *Ipomoea indica* (Burman) Merrill
- Convolvulus obscurus* L. See *Ipomoea obscura* (L.) Kergawler
- Convolvulus paniculatus* L. See *Ipomoea mauritiana* Jacquin
- Convolvulus peltatus* L. See *Merremia peltata* (L.) Merrill
- Convolvulus pennatus* Desrousseaux. See *Ipomoea quamoclit* L.
- Convolvulus pes-caprae* L. See *Ipomoea pes-caprae* (L.) R. Brown
- Convolvulus tiliaefolius* Desrousseaux. See *Stictocardia campanulata* (L.) Merrill
- Convolvulus tridentatus* L. See *Merremia tridentata* (L.) Hallier f.
- Convolvulus trilobatus* Gaudichaud. See *Ipomoea triloba* L.
- Convolvulus tuba* Schlechtendal. See *Ipomoea macrantha* Roemer & Schultes
- Convolvulus turpethum* L. See *Operculina turpethum* (L.) Manso
- Convolvulus umbellatus* L. See *Merremia umbellata* (L.) Hallier f.
- Convolvulus ventricosus* Bertero. See *Operculina ventricosa* (Bertero) Peter
- Erycbe* sp. The Kusaie record in Kanehira's Enumeration, 1935:398, is based on a specimen of *Embelia* sp.
- Evolvulus hederaceus* Burman f. See *Merremia hederacea* (Burman f.) Hallier f.
- Ipomoea aegyptia* L. See *Merremia aegyptia* (L.) Urban
- Ipomoea alba* sensu Taylor. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea angulata* Lamarck. See *Ipomoea hederifolia* L.
- Ipomoea biloba* sensu Safford, Okabe. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Ipomoea bona-nox* L. See *Ipomoea alba* L.
- Ipomoea bona-nox* sensu Guillaumin. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea brasiliensis* (L.) Sweet. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Ipomoea campanulata* L. See *Stictocardia campanulata* (L.) Merrill
- Ipomoea choisiana* Wight ex Safford (*I. choisyana* Merrill, sphalm.). See *Ipomoea littoralis* Blume
- Ipomoea coccinea* sensu auct. plur. See *Ipomoea hederifolia* L.
- Ipomoea congesta* R. Brown. See *Ipomoea indica* (Burman) Merrill
- Ipomoea crassicaulis* (Bentham) Robinson. See *Ipomoea fistulosa* Martius ex Choisy
- Ipomoea denticulata* (Desrousseaux) Choisy. See *Ipomoea littoralis* Blume
- Ipomoea digitata* sensu Hosokawa, Glassman. See *Ipomoea mauritiana* Jacquin
- Ipomoea fimbriosepala* Choisy. See *Ipomoea setifera* var. *fimbriosepala* (Choisy) Fosberg
- Ipomoea glaberrima* Bojer ex Bouton. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea gracilis* sensu auct. plur. See *Ipomoea littoralis* Blume
- Ipomoea gracilis* sensu Glassman. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea grandiflora* sensu auct. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea hederacea* sensu auct. See *Ipomoea indica* (Burman) Merrill
- Ipomoea insularis* (Choisy) Steudel. See *Ipomoea indica* (Burman) Merrill
- Ipomoea longiflora* R. Brown. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea mariannensis* Choisy. See *Ipomoea triloba* L.
- Ipomoea maritima* (Desrousseaux) R. Brown. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Ipomoea maxima* sensu auct. plur. See *Ipomoea sepiaria* Koenig ex Roxburgh
- Ipomoea paniculata* (L.) R. Brown. See *Ipomoea mauritiana* Jacquin
- Ipomoea peltata* (L.) Choisy. See *Merremia peltata* (L.) Merrill
- Ipomoea pes-caprae* sensu auct. plur. [most Pacific authors]. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Ipomoea purga* sensu Okabe. See *Ipomoea pes-caprae* ssp. *brasiliensis* (L.) van Ooststroom
- Ipomoea reptans* sensu auct. See *Ipomoea aquatica* Forskål
- Ipomoea tiliaefolia* (Desrousseaux) Roemer & Schultes. See *Stictocardia campanulata* (L.) Merrill
- Ipomoea triloba*? var. [Gaudichaud 169 (G)]. See *Ipomoea littoralis* Blume
- Ipomoea tuba* (Schlechtendal) G. Don. See *Ipomoea macrantha* Roemer & Schultes
- Ipomoea tuberosa* L. See *Merremia tuberosa* (L.) Rendle
- Ipomoea turpethum* (L.) R. Brown. See *Operculina turpethum* (L.) Manso
- Lettsomia* Roxburgh. See *Argyreia* Loureiro
- Merremia convolvulacea* Dennstedt. See *Merremia hederacea* (Burman f.) Hallier f.
- Merremia elmeri* Merrill. See *Merremia umbellata* (L.) Hallier f.
- Merremia hastata* Hallier f. See *Merremia tridentata* ssp. *hastata* van Ooststroom
- Merremia umbellata* sensu Kanehira. See *Operculina turpethum* (L.) Manso
- Operculina peltata* (L.) Hallier f. See *Merremia peltata* (L.) Merrill

Operculina tuberosa (L.) Meissner. See *Merremia tuberosa* (L.) Rendle
Pharbitis Choisy. See *Ipomoea* L.
Pharbitis congesta (R. Brown) Hara. See *Ipomoea indica* (Burman) Merrill
Pharbitis hederacea sensu Safford. See *Ipomoea indica* (Burman) Merrill
Pharbitis insularis Choisy. See *Ipomoea indica* (Burman) Merrill
Pharbitis nil sensu Safford. See *Ipomoea indica* (Burman) Merrill
Quamoclit Moench. See *Ipomoea* L.

Quamoclit coccinea sensu auct. plur. See *Ipomoea hederifolia* L.
Quamoclit pennata (Desrousseaux) Bojer (*Q. pinnata* Bojer, sphalm.) See *Ipomoea quamoclit* L.
Quamoclit quamoclit (L.) Britton. See *Ipomoea quamoclit* L.
Rivea sensu Merrill. See *Stictocardia* Hallier f.
Rivea campanulata (L.) House. See *Stictocardia campanulata* (L.) Merrill
Rivea tiliaefolia (Desrousseaux) Choisy. See *Stictocardia campanulata* (L.) Merrill
Stictocardia tiliaefolia (Desrousseaux) Hallier f. See *Stictocardia campanulata* (L.) Merrill

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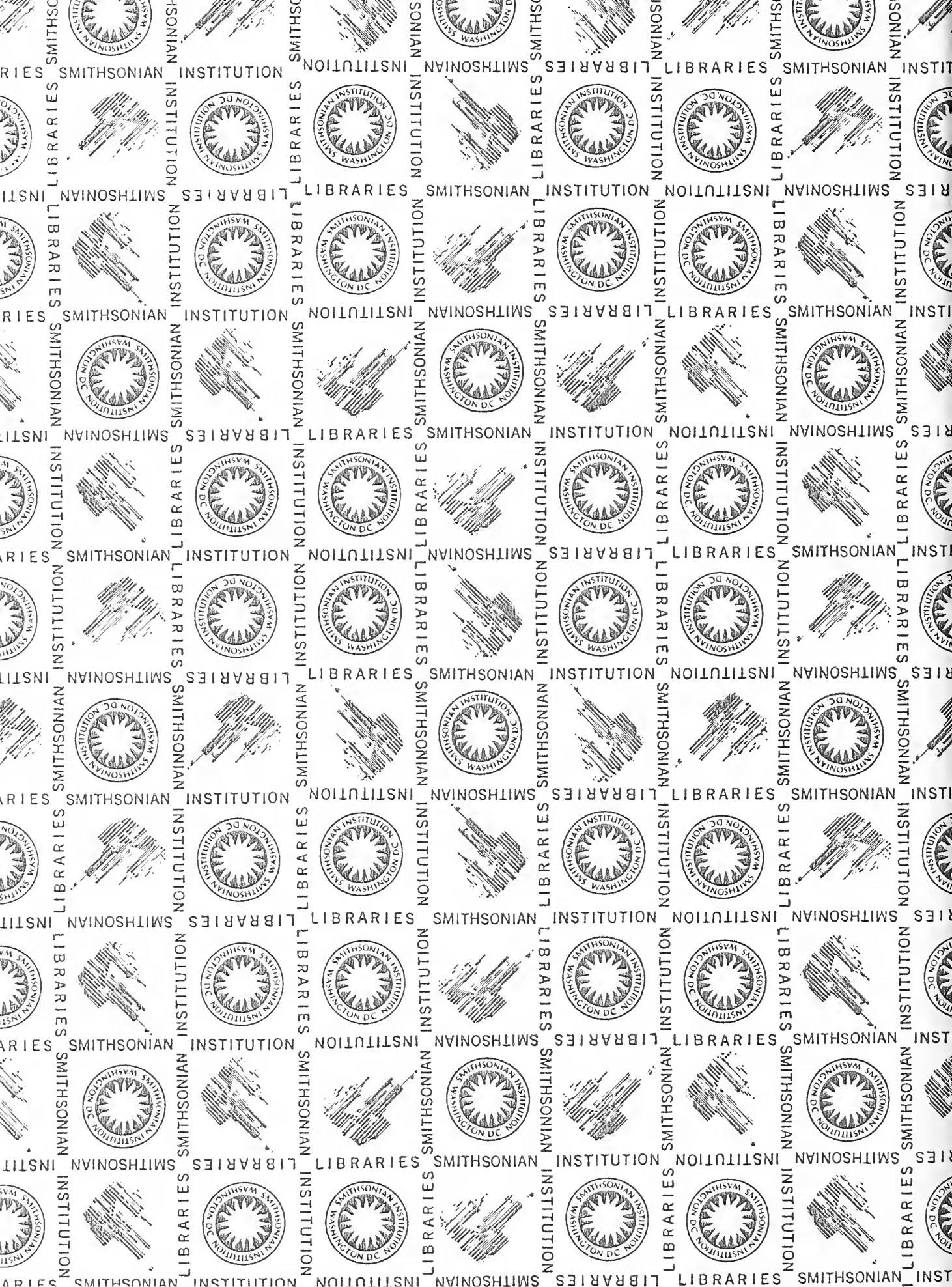
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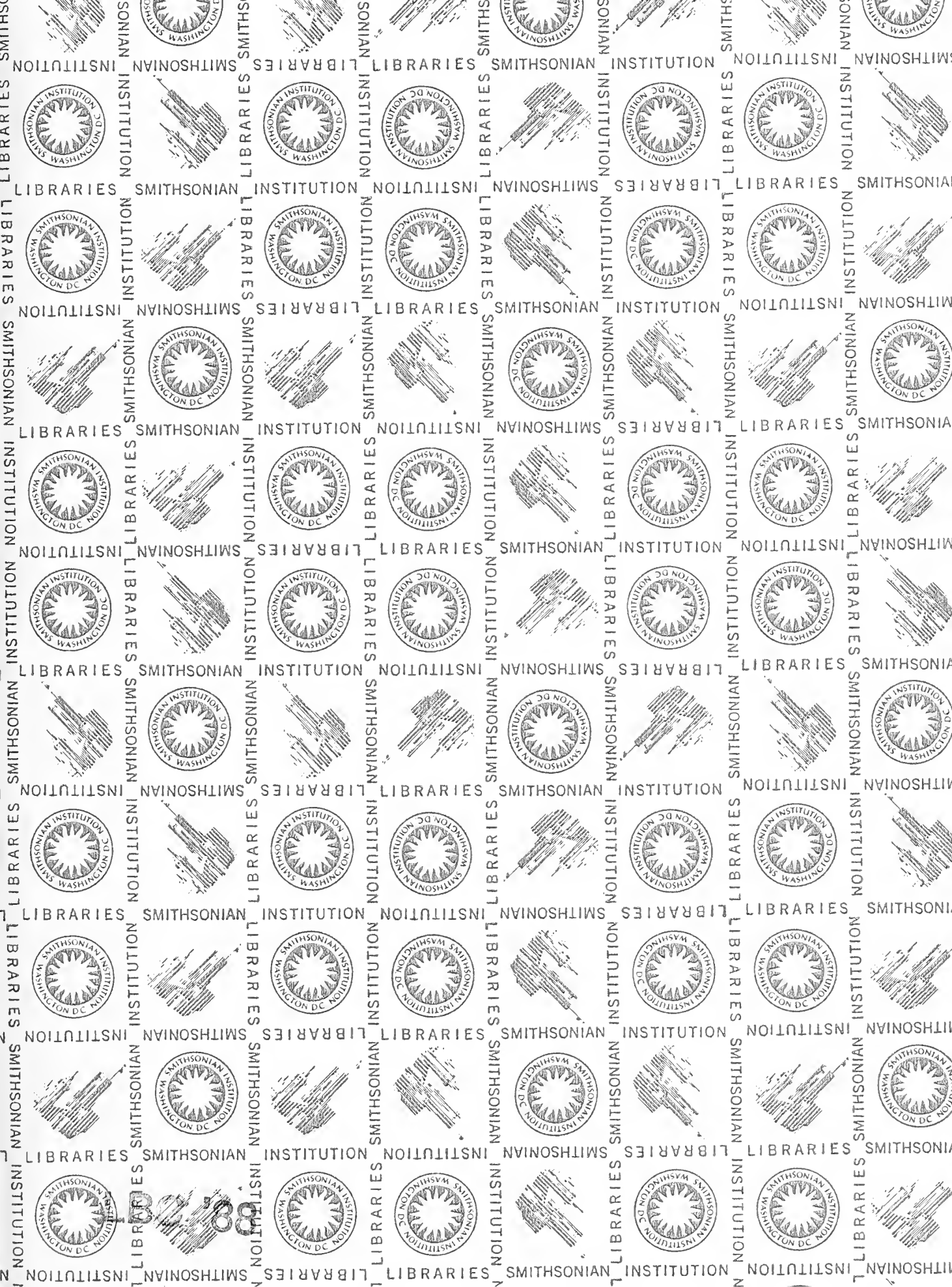
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